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Assistance related to suicidal behavior at a mobile emergency service: Sociodemographic and clinical associated factors

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ABSTRACT

It is important to investigate the care given to people with suicidal behavior, as it is an important predictor of future death by suicide and there is a lack of studies on this issue in Brazil. This study had the objective of investigating assistance related to suicidal behavior at a mobile emergency service and sociodemographic and clinical associated factors. This was a quantitative, cross-sectional study based on documental information. The data were collected through manual consultation of nursing records in which call-outs for suicidal behavior in the year 2014 were documented. The data were analyzed using descriptive statistics, Chi-squared test, Fisher's exact test, correlation tests, and comparison of means tests. In the 313 records analyzed there was a predominance of adult women with self-inflicted drug poisoning, attended to in their own residence and referred to pre-hospital emergency medical services. There was a lack of documentation on signs, symptoms, and grievances in most cases. The interventions most carried out by the nurses were related to monitoring of clinical parameters. There were differences related to the victim's sex and lethality, suicide attempt method, referral to emergency services, and semester of occurrence (January–June, July–December). Suicide attempts through self-poisoning or self-inflicted injuries differed in relation to time of call-out, waiting time, lethality, documentation on clinical assessment and interventions, and referral to emergency services. This study enabled the charting of factors linked with suicidal behavior and associated factors; it offers reflections on limitations and nursing care potential in the prevention of reoccurrence of suicidal behavior.

Introduction

Suicide is among the principal causes of death in the world, with around a million people dying each year, despite it being underreported. It is estimated that death by suicide is greater than death through wars and civil conflicts (World Health Organization [WHO], 2014).

Brazil, which has the characteristics of a developing country, is among the top 10 countries for absolute numbers of suicides (WHO, 2014) and the majority of nursing professionals involved in emergencies do not seem to have experience or professional training in mental health care or suicide protection or prevention (Vedana, Magrini, Miasso, et al., 2017; Vedana, Magrini, Zanetti, et al., 2017).

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The high rate of suicide attempts and deaths by suicide indicates a necessity to improve health care for vulnerable people, and emergency services may have a strategic role in this scenario (Kawashima, Yonemoto, Inagaki, and Yamada, 2014), as they are commonly the first point of contact with mental health care for people with suicidal behavior (Lin et al., 2014). In fact, in many cases this may be the only place providing access to some kind of treatment, given that follow-up of patients after discharge from emergency services is challenging (Lin et al., 2014) and people with suicidal behavior may have difficulty adhering to intensive treatment over time (Berrouiguet, Courtet, Larsen, Walter, & Vaiva, 2018). Thus, the assistance given by different emergency services may constitute an opportunity to provide care intervention and to prevent future attempts with a fatal outcome (Kawashima, Yonemoto, Inagaki, & Yamada, 2014).

Knowledge of local characteristics related to suicide is important to draft suicide protection and prevention programs (Machado & dos Santos, 2015). However, it is important to widely investigate not only suicide, but also suicidal behavior. Fatal suicidal behavior, that is, death by suicide, is more systematically studied than non-fatal suicidal behavior (suicide ideation, plans, and attempts). Nevertheless, it is important to know the characteristics connected to non-fatal suicidal behavior, as a suicide attempt is associated with elevated mental suffering and is the principal predictor of future death by suicide. It is estimated that people having attempted suicide have a suicide risk five times higher than the general population (Owens, Horrocks, & House, 2002).

A review study on fatal and non-fatal suicidal behavior identified that, in different countries, non-fatal suicide attempts are most frequent among adolescents, young adults, and women. On the other hand, advanced age, being male, living alone, and having easy access to lethal methods are factors associated with increased risk of death by suicide (Conejero, Lopez-Castroman, Giner, & Baca-Garcia, 2016). A low level of education, unemployment, financial problems, and belonging to an ethnic or sexual minority are generally associated with a higher risk of suicidal behavior in general (Conejero et al., 2016). Being religious, though, is described as a protective factor against suicide (Conejero et al., 2016).

One of the few Brazilian studies on characteristics of non-fatal suicidal behavior was conducted in a municipality in the state of São Paulo and identified that, during life, 17.1% of participants reported suicidal ideation, 4.8% referred to plans, and 2.8% reported previous suicide attempts. In the last 12 months prior to the non-fatal suicidal behavior, the prevalence for suicidal ideation was 5.3%, 1.9% for plans, and 0.4% for suicide attempts (Botega et al., 2009).

There is a lack of studies analyzing factors associated with emergency care for people with suicidal behavior (Chakravarthy et al., 2014), especially in Brazil, which further reinforces the importance of the present study, which approached different factors related to such behavior, to include sex, age, suicide attempt method, documented signs and symptoms, type and quantity of injuries, location, and time of call-out.

Improved charting of the demands related to suicidal behavior is relevant for the projection of suicide prevention strategies (Ayehu, Solomon, & Lemma, 2017), for the planning of nursing care, and for understanding the necessary competencies for providing such assistance. This study aims to investigate the assistance provided related to suicidal behavior at a mobile emergency service and the associated sociodemographic and clinical factors related to those with suicidal behavior.

Methods

Research design

This was a cross-sectional study with a quantitative approach, based on documented information.

Setting

The study was conducted at a mobile emergency service composed of 10 basic life-support ambulances that carry out the first response and transportation in emergency incidents in a Brazilian municipality. The city is located in the state of São Paulo, Brazil, and has an area of approximately 650 km^2 and a high demographic density of 995.3 inhabitants/km^2. The estimated population in 2016 was 674,405 inhabitants, predominantly living in urban areas. The public service studied was recognized as the most important provider of emergency mobile care within this municipality. This study was presented according to the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines (Vandenbroucke et al., 2014).

Nursing professionals working at this service were selected for employment following a general knowledge exam and, thus, did not receive specific training or instruction in assisting patients with suicidal behavior.

Selection criteria for the nursing records

At the mobile emergency service there is a center answering calls and sending ambulances to the location of the call-out. Each call-out generates a file that is completed by the nursing professional responsible for providing the patient with care.

The criteria for inclusion of the records in the study were nursing records in which fatal or non-fatal suicidal behavior was documented in the period from January 1, 2014 to December 31, 2014. This period was chosen because it provides the most complete recent annual data that are entirely available and were collected in a uniform way (with the same registration form) in the service. Nursing records in which suicidal behavior was not clearly documented were excluded from the study.

Measures

The variables investigated to achieve the objective of the study were sex and age of the victim, semester (first - January to June; or second - July to December), location and time of call-out, waiting time for assistance, type of suicidal behavior (with or without a suicide attempt), suicide attempt method, documented signs and symptoms (type and quantity), documented traumatic injuries (type and quantity of injuries, for example, sprains, strains, bone breaks, burns, amputation), documented clinical assessment (type and quantity), documented nursing interventions (type and quantity), and final destination (health care service, no referral or death at the site of assistance). The products used in cases of deliberate self-poisoning were also analyzed. In this study, the expression “deliberate self-poisoning” refers to the deliberate ingestion of substances (poisons, drugs, medications in excess) in a possible attempted suicide.

Procedures

A manual consultation was carried out encompassing all the nursing care records from January 1, 2014 to December 31, 2014. A total of 48,168 files were analyzed for call-outs handled by basic life-support units, with 313 included in the study after meeting the selection criteria.

Data extraction was guided by a specific script based on the structures of the nursing records used by the service. Therefore, the same expressions and response options available in the files were used, enabling the collected information to be compatible with the material registered at the study location.

Data processing and analysis

The data obtained from the nursing records were double-entered into Microsoft Excel by two different people. Discrepancies between data were solved by checking the files. The data were subsequently

imported to the Statistical Package for the Social Sciences (SPSS) version 24 (Pallant, 2016).

The data were presented using descriptive statistics. Then, associations between sex, age group, suicide attempt method (deliberate self-poisoning or self- inflicted injuries), quantity and types of substances used in deliberate self-poisoning were tested. Semester, location and time of call-out were also tested, as well as waiting time, documented signs and symptoms (quantity), documented traumatic injuries (quantity), documented clinical assessment (quantity), documented nursing interventions (quantity), and final destination (health care service, no referral, or death at the site of assistance).

The associations between categorical variables were tested through the Chi-squared test and Fisher's Exact Test. The associations between numerical variables were evaluated through Pearson's correlation coefficient and Spearman's correlation. Mean comparison tests (Kruskal-Wallis Test and the Mann-Whitney *U* test) were used to examine the associations between a categorical variable and a numerical variable (Pagano and Gauvreau, 2011; Pallant, 2016). The minimum alpha level accepted in scientific research, which is 0.05 ($p < 0.05$), was used in this study. The level of significance adopted was $p < 0.05$.

Ethical aspects

The study was initiated after authorization by the municipal health department and it was approved by the Ethics Committee of the Ribeirao Preto College of Nursing of the University of Sao Paulo. This research followed the recommendations related to research involving human beings.

Results

Characteristics of call-outs related to suicidal behavior

In this study, 48,168 nursing records were manually analyzed, and 313 were found to be related to suicidal behavior and were included in the study.

The majority of the call-outs related to suicidal behavior refer to women (60.1%), aged from 20 to 59 years (74.5%), who attempted suicide (96.5%) by deliberate self-poisoning (73.5%), were in their own homes (84.3%), and were referred to a pre-hospital health care service (62.9%). It can also be highlighted that there was an equal division of the call-outs between the semesters (see Table 1).

In the cases of deliberate self-poisoning, a drug was used by most of the victims (63.9%), in isolation (54.8%) or associated with other substances (9.1%).

Signs, symptoms, and interventions documented by nurses during call-outs related to suicidal behavior

The majority of the nursing records (60.7%) did not contain any documentation of evaluated or identified signs or symptoms. “Psychiatric alteration” (psychotic symptoms, alterations in cognition or mood) predominated, being documented in 16% of the files, followed by psychomotor agitation present in 7.3% of the analyzed files.

According to the analyzed records, the interventions most performed by the nursing staff were related to monitoring clinical parameters such as blood pressure, heart rate, pulse oximetry, respiratory rate, and monitoring of the level of consciousness, among others. However, the only procedures carried out in most cases were checking blood pressure and evaluating heart rate (see Table 2).

Associations between sociodemographic characteristics of the patients and assistance provided

Table 3 presents the results of tests of association between sex and other characteristics of the call-outs. Males had a higher quantity of signs and symptoms documented and all the deaths that occurred at the location where the victim was attended were observed among men.

Females were associated with call-outs in the first semester (January–June), suicide attempts by self-poisoning, and the use of a higher quantity of substances in cases of deliberate self-poisoning. It was also observed that there was a higher quantity of women in those cases in which there was no removal of the victim by an ambulance (see Table 3).

The results of the association tests did not demonstrate a statistically significant association between age group and other characteristics of the call-outs (data not shown).

Table 1
Characteristics of call-outs related to suicidal behavior carried out by basic life-support units (n = 313).

Variable	N	%
Sex		
Female	188	60.1
Male	104	33.2
Not informed	21	6.7
Age		
Young person (0 to 19)	27	8.6
Adult (20 to 59)	233	74.5
Elderly (over 60)	15	4.7
Not informed	38	12.1
Suicide attempt		
Yes	302	96.5
No	11	3.6
Attempt method		
Deliberate self-poisoning	230	73.5
Injury from a non-lethal weapon	44	14.2
Hanging	17	5.4
Fall	3	1.0
Burn	2	0.6
Automobile accident	2	0.6
Drowning	1	0.3
Not applicable	7	2.2
Not informed	16	5.1
Time of call-out		
06h00–11h59	57	18.2
12h00–17h59	71	22.7
18h00–23h59	95	30.0
24h00–05h59	40	12.8
Not informed	50	16.0
Semester		
First (January–June)	155	49.5
Second (July–December)	158	50.5
Final destination		
Health care service	238	76.0
Not removed	40	12.8
Death on site	6	1.9
Not informed	29	9.3

Table 2
Nursing interventions documented in nursing records for call-outs related to suicidal behavior carried out by basic life-support units (n = 313).

Intervention	N	%
Blood pressure check	162	51.8
Heart rate evaluation	159	50.8
Pulse oximetry	151	48.2
Respiratory rate evaluation	46	14.7
Monitoring consciousness level	55	17.6
Application of the Glasgow coma scale	39	12.5
Oxygen therapy	9	3.5
Glucose monitoring	7	3.7
Mechanical containment	4	1.3
Board immobilization	4	1.2
Cervical immobilization	2	0.6
Unblocking of upper airways	1	0.3
Splint immobilization	1	0.3
CPR	1	0.3

Table 3
Association between sex and characteristics of call-outs related to suicidal behavior carried out by basic life-support units (n = 313).

Variable	Sex		
	Male	Female	
	Mean (SD)		p value
Quantity of substances	0.88 (1.00)	1.20 (0.98)	**0.001**[a]
Signs/symptoms	0.74 (0.96)	0.51 (0.82)	**0.017**[a]
Traumatic injuries	0.14 (0.35)	0.10 (0.30)	0.272[a]
Clinical assessment	1.81 (1.77)	1.84 (1.63)	0.945[a]
Interventions	1.38 (1.37)	1.37 (1.23)	0.813[a]
Waiting time (min)	12.68 (28.36)	12.12 (13.67)	0.297[a]

Variable	Sex		
	Male	Female	
	N (%)		p value
Age group (years)			
Adolescents (8–19)	11 (40.7)	16 (59.3)	0.345[b]
Adults (20–59)	80 (35.4)	146 (64.6)	
Elderly (60 or above)	8 (53.3)	7 (46.7)	
Method used			
Deliberate self-poisoning	63 (29.3)	152 (70.7)	< **0.001**[c]
Self-inflicted injury	41 (53.2)	36 (46.8)	
Call-out time			
06h00–11h59	25 (46.3)	29 (53.7)	0.217[b]
12h00–17h59	23 (35.4)	42 (64.6)	
18h00–23h59	28 (31.1)	62 (68.9)	
24h00–05h59	10 (27.8)	26 (72.2)	
Semester			
First (January–June)	39 (27.9)	101 (72.1)	**0.008**[c]
Second (July–December)	65 (42.8)	87 (57.2)	
Final destination			
Health care service	82 (36.3)	144 (63.7)	**0.004**[c]
Not removed	8 (24.2)	25 (75.8)	
Death on site	6 (100.0)	0 (0.0)	

Bold values indicate $p < 0.05$.
[a] Mann-Whitney *U* test.
[b] Chi-squared test.
[c] Fisher's exact test.

Associations between suicidal behavior characteristics and assistance provided

Table 4 presents the results of tests of association between the method used in the suicidal behavior and other characteristics of the call-outs. The cases of deliberate self-poisoning were related to a higher quantity of documented clinical assessments and interventions, besides longer waiting time (which is understood as the time elapsing between the call and the arrival of the ambulance). Deliberate self-poisonings were also more frequent in the period between 18h and 23h59, and there was a higher quantity of self-poisoning among those cases in which there was no removal of the victim by an ambulance, that is, when there was no referral of the patient to a health care service.

Self-inflicted injuries (wounding by a non-lethal weapon, hanging, fall, burns, automobile accident or drowning) were associated with death at the location and with a higher quantity of documented signs, symptoms and traumatic injuries (see Table 4).

In the cases of deliberate self-poisoning, associations between quantity of substances and call-out characteristics were tested. It was observed that the higher the quantity of substances used, the lower the quantity of documented signs, symptoms, and traumatic injuries and the higher the quantity of documented clinical assessments and interventions in the nursing records (see Table 5).

The Mann-Whitney *U* test was also used, but showed no significant association between quantity of substances and final destination of the victim (health care service, death, or not removed).

Table 4
Association between method used in suicidal behavior and characteristics of the call-outs related handled by basic life-support units (n = 313).

Variable	Method used		
	Self-inflicted intoxication	Self-inflicted injury	
	Mean (SD)		p value
Signs/symptoms	0.43 (0.74)	1.04 (1.10)	< **0.001**[a]
Traumatic injuries	0.04 (0.19)	0.30 (0.46)	< **0.001**[a]
Clinical assessment	2.07 (1.59)	0.99 (1.62)	< **0.001**[a]
Interventions	1.49 (1.18)	0.90 (1.42)	< **0.001**[a]
Waiting time (min)	13.96 (27.16)	10.89 (15.37)	0.161[a]

Variable	Method used		
	Self-inflicted intoxication	Self-inflicted injury	
	N (%)		p value
Call-out time			
06h00–11h59	37 (64.9)	20 (35.1)	**0.006**[b]
12h00–17h59	49 (69.0)	22 (31.0)	
18h00–23h59	83 (87.4)	12 (12.6)	
24h00–05h59	29 (72.5)	11 (27.5)	
Semester			
First (January–June)	118 (76.1)	37 (23.9)	0.293[b]
Second (July–December)	112 (70.9)	46 (29.1)	
Final destination			
Health care service	177 (74.4)	61 (25.6)	< **0.001**[c]
Not removed	31 (77.5)	9 (22.5)	
Death on site	0	6 (100)	

Bold values indicate $p < 0.05$.
[a] Mann-Whitney *U* test.
[b] Chi-squared test.
[c] Fisher's exact test.

Table 5
Association between quantity of substances and characteristics of call-outs for deliberate self-poisoning handled by basic life-support units (n = 230).

Variable	Quantity of substances	
	C	p value
Signs/symptoms	−0.180[a]	**0.002**
Traumatic injuries	−0.340	< **0.001**
Clinical assessment	0.261	< **0.001**
Interventions	0.234	< **0.001**
Waiting time (min)	0.093	0.168

Bold values indicate $p < 0.05$.
[a] Pearson's correlation coefficient.

In the cases of deliberate self-poisoning, tests of association (Chi-squared and Fisher, Kruskal-Wallis, Mann-Whitney and Spearman's correlation) did not detect significant associations between type of substance used (medication or other substances) and other characteristics of the call-outs.

Discussion

This study investigated call-outs handled by a pre-hospital emergency service over a period of one year. There was a predominance of adult women who attempted suicide by drug intoxication in their own homes and were referred to a pre-hospital emergency service. In the majority of the files there were no signs, symptoms, or grievances documented. The interventions most performed by the nurses were related to monitoring of clinical parameters. There were differences

related to the sex of the victim and lethality of the suicidal behavior, suicide attempt method, referral to emergency services, and semester. Suicide attempts by self-poisoning or self-inflicted injury differed in relation to call-out time, waiting time, lethality, documentation of clinical assessment and interventions, and referral to emergency services.

In the context investigated, suicidal behavior was associated with location and common accessible methods, as there was a predominance of suicide attempts involving medication in the victim's own residence. A Brazilian study investigating deaths by suicide also identified that the home was the most frequent scenario for such occurrences (Lovisi, Santos, Legay, Abelha, & Valencia, 2009), which is an aspect deserving special emphasis in the planning of preventative strategies and crisis management plans among people vulnerable to suicidal behavior.

The most frequently used suicide methods vary according to culture and accessibility (Botega, 2014). However, in the literature, deliberate self-poisoning is identified as the most common method among non-fatal attempts and the female public, as corroborated by the present study (Bernardes, Turini, & Matsuo, 2010; Hawton & Fagg, 2011; Nordentoft, Breum, Munck, Nordestgaard, & Hunding, 1993; Vidal, Gontijo, & Lima, 2013). Although self-poisonings are suicide attempt methods generally associated with lower rates of lethality (Lovisi et al., 2009), they are of concern for being easily accessible and frequent. Moreover, people that survive a deliberate self-poisoning episode have a higher chance of dying by suicide (Stenbacka, Samuelsson, Nordström, & Jokinen, 2017) and there may be an alteration in the methods used for suicide attempts with progression in the direction of more lethal methods (Chen et al., 2016).

High rates of deliberate self-poisoning using medication may be related to the vast availability and accessibility of pharmaceuticals (Lovisi et al., 2009). It is important to guarantee monitoring of necessities and the suicide risk assessment among people being treated for different conditions, as well as offering psycho-education, access to different forms of therapy, and other actions promoting the rational use of medication.

In this study, most patients were referred to an emergency service. However, follow-up and maintenance of treatment after assistance from an emergency service tends to be challenging (Lin et al., 2014) and people with suicidal behavior may have more difficulty adhering to intensive treatment over time (Berrouiguet et al., 2018).

In regard to clinical assessment and nursing care provided to this clientele, in most of the analyzed nursing records there was no documentation of signs, symptoms, or grievances. It was not possible to understand if the assessment and care provided by the nurses was scant or insufficiently documented. It should be stressed that systematization of nursing care requires sufficient data collection to enable clinical judgement and planning of individualized care (North American Nursing Diagnosis Association [NANDA], 2015).

The interventions most performed by the nursing staff were related to the monitoring of clinical parameters, an aspect which reflects care priorities but contrasts with the lack of documentation of traumatic injuries, signs, and symptoms. These results highlight the importance of evaluating compatibility between time spent providing care and characteristics and practicalities of keeping records, as well as aspects related to professional formation and competencies. Brazilian studies have revealed that nursing professionals acting in emergencies have low educational exposure to suicide (Vedana, Magrini, Zanetti, et al., 2017) and tend to be restricted to care related to the physical demands of the patients, as they do not feel sufficiently well prepared to care for people at risk of suicide and refer to not having access to protocols, supervision, support, and continuing education (Vedana, Magrini, Miasso, et al., 2017).

In this study differences were observed in relation to the victim's sex and lethality of the suicidal behavior, suicide attempt method, referral to emergency services, and semester. Higher survival rates were observed among women, along with less referrals to health care services, less documentation of signs and symptoms, more occurrences in the first semester, and greater deliberate self-poisoning and the use of a higher quantity of substances in self-poisoning attempts. In accordance with the literature, suicide thoughts and attempts during life are more common among women, although death by suicide is more common among men. Such differences are moderate, but not overridden by other factors such as age, race, or geographical region. However, access to fatal methods, mental illness, and cultural aspects may affect the differences between sexes in relation to suicidal behavior (Fox, Millner, Mukerji, & Nock, 2017). These findings reinforce the importance of considering the specificities of each gender in reference to mental health care and the prevention of suicidal behavior.

It should also be highlighted that in the present study it was not possible to evaluate information related to gender identity or sexual orientation. However, the literature indicates that belonging to a sexual minority may be a risk factor for suicidal behavior, as a consequence of being associated with numerous adversities, stresses, and mental suffering (Fox et al., 2017).

No statistically significant association was observed between the different age groups and other characteristics of the call-outs analyzed in the present study. These results contrast with some of the information available in the literature, especially in relation to lethality of suicidal behavior. Studies in different countries suggest that behavior characteristics seem to vary along the life cycle. Non-fatal suicide attempts tend to be more frequent among adolescents and young adults. On the other hand, advanced age is associated with death by suicide (Conejero et al., 2016; Jiménez-Hernández et al., 2017; Lovisi et al., 2009; Owens, Fingar, Heslin, Mutter, & Booth, 2017). However, the number of deaths identified in the present study may have been insufficient to permit such an observation.

Differences were identified between suicide attempts by self-poisoning and self-inflicted injury. Suicide attempts by self-poisoning were more frequent in the period between 18h and 23h59 and were associated with higher survival rates, less referrals to health services, less documentation of signs, symptoms and grievances, more documentation of clinical assessment and interventions, and longer waiting time. In cases of deliberate self-poisoning, higher quantities of substances used were associated with greater documentation of clinical assessment and interventions, but lower quantities of documented signs, symptoms, and grievances. The difficulty comparing some of these findings and the available literature is justified by the lack of similar studies.

The differences identified in nursing assistance in relation to suicide attempt methods do not appear to be explained purely by clinical judgement, as the greater level of assessment and intervention observed among deliberate self-poisonings contrasts with less documentation of signs, less referral of these cases to emergency services, and with the lower levels of lethality associated with this method. Such aspects reinforce the importance of investment in supervision, support, and continuing education of professionals acting in emergencies, as well as in the development and implementation of strategies promoting reflection, sharing experiences, self-assessment, and redefinition of care practices (Vedana, Magrini, Miasso, et al., 2017).

In Brazil, suicide is not a crime, but it is unacceptable socially and it is associated with derogatory judgments. Studies with nurses and other professionals working in emergency medicine showed that they expressed suicide-related judgments, moralistic attitudes, and difficulty in having an empathic and understanding relationship with these patients (Dória & Faro, 2017; Vedana, Magrini, Zanetti, et al., 2017). The presence of labels, negative stereotypes, and stigma may impair assistance, the clinical condition of the people who attempt suicide, and their feelings (i.e., discrimination, social rejection, exclusion, and a frustrated expectation of belonging and prejudice) (Reynders, Kerkhof, Molenberghs, & Van Audenhove, 2014; da Silva, Sougey, and Silva, 2015). Other Brazilian studies showed that health professionals consider suicide behavior as optional, culpable, and a non-priority (Dória & Faro, 2017) and, in some contexts, the emergency approach regarding

suicidal behavior is characterized by precariousness, dehumanization, and neglect (Machado, da Silva Leite, and Bando, 2014), as well as a lack of training for professionals to deal with the issue (Vedana, Magrini, Miasso, et al., 2017; Vedana, Magrini, Zanetti, et al., 2017).

The development and promotion of research of rigorous methodology related to interventions for the reduction of suicidal behavior is of the utmost importance, as there is still a lack of sufficiently solid evidence to guide prevention practices and policies capable of contributing to a reduction in suicidal behavior (Robinson & Pirkis, 2014; Silverman, Pirkis, Pearson, & Sherrill, 2014). The present study contributes to the recognition of factors associated with suicidal behavior and the limits of nursing assistance, which highlights aspects related to the greater vulnerability of these patients and poses the limitations and potentialities of nursing care in the prevention of suicidal behavior. This knowledge can advance knowledge related to suicidal behavior and inform the planning and perfecting of care, continuing education, management, and policies related to pre-hospital emergency services.

Limitations of the study

This study had limitations in the form of a limited sample related to a single municipality and the reliance on secondary data with a scarcity of information in the files related to some aspects related to assessment and assistance in each call-out. However, this is a pioneering study in its description of nursing care in occurrences of suicidal behavior handled by a mobile emergency service in the Brazilian context.

Practical implications

In the development of plans for managing crisis among people vulnerable to suicidal behavior, it is important to consider the risk of suicide attempts in the domestic environment using methods of easy access.

It is also important to develop and evaluate effective strategies for the prevention of self-intoxication and its reoccurrence. The importance of promoting rational medication use should also be noted, along with assessing suicide risk among people in treatment for different conditions, as well as offering psycho-education and other forms of therapy promoting mental health.

This study reinforces the importance of systematic assessment and implementation of strategies promoting quality of care and of nursing records during emergency assistance.

It is necessary to develop and investigate aspects of supervision, support, and continuing education so that nursing care in emergencies incorporates, but is not restricted to, meeting the physical demands of patients with suicidal behavior.

It is important to consider the specificities of each gender in reference to mental health care and in the prevention of suicidal behavior.

In contexts of limited educational exposure to suicide, nursing care in relation to different suicide attempt methods may reveal inconsistencies and a lack of adequate documentation. Such insufficiencies reinforce the importance of investment in policies, supervision, support, and continuing education for professionals providing care in emergency settings.

Declaration of conflicting interests

The authors declared no conflicts interest with respect the authorship and/or publication of this article.

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