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CROSS-SECTIONAL STUDY

Nurses' knowledge of the italian ministerial recommendation no. 4 (MR4) on the prevention of patient suicide in hospitals: a pilot study

Maurizio Calamita[1], Donatella D'Accolti[2,3], Carmela Marseglia[2,3], Carmela Fiore[4], Stefania Crescenza Pietanza[5], Salvatore Grasso[2,3], Livio Melpignano[1], Antonio Pisciotta[1], Laura Pagliari[1,3], Noemi Chiumarulo[3], Vito Muschitiello[2,3]

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Findings:

The questionnaire revealed a satisfactory level of knowledge of Ministerial Recommendation No. 4 among nurses, but low internal reliability and significant gaps in older and more experienced professional.

ABSTRACT

BACKGROUND: healthcare companies are responsible for preventing patient suicide in hospital through the development of protocols that implement Ministerial Recommendation No. 4 (MR4) of the Ministry of Health, 2008. In Italy there are no assessment scales that investigate the level of knowledge of MR4. **Aim:** To Assess nurses' knowledge level of MR4.

METHODS: Pilot study conducted in the period between November 2023 and December 2023 in a sample of nurses. The questionnaire consisted of 8 questions that investigated the level of knowledge of MR4.

RESULTS: 141 eligible nurses participated in the questionnaire (90.4%). Of these, 36.9% were aged between 30 and 40 years and 48 interviewees had less than 10 years of work experience. The Cronbach alpha of the scale was 0.486. 62.4% of the sample had a good level of knowledge of the MR4. The risk of not knowing the MR4 was significantly high for subjects over 50 years of age (RR = 1.86; CI = 1.04 - 3.34; p = .034); similarly, the risk of not knowing the MR4 was quite high for subjects with more than 30 years of service (RR = 1.80; CI = 0.89 - 3.65; p = .101).

CONCLUSIONS: although the instrument would require a more in-depth review for greater reliability, the level of knowledge of the MR4 was optimal; the critical issues that emerged concern nurses with advanced age and work experience. There is an urgent need to experiment with training strategies for the prevention of patient suicide in hospital.

KEYWORDS: *Suicide, Prevention, Nurse, Knowledge, Hospitals*

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STUDIO TRASVERSALE

Conoscenza da parte degli infermieri della raccomandazione ministeriale n. 4 (RM4) sulla prevenzione del suicidio di paziente in ospedale: uno studio pilota

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Riscontri:

Il questionario ha mostrato un livello di conoscenza soddisfacente della Raccomandazione Ministeriale 4 tra gli infermieri, ma una bassa affidabilità interna e criticità rilevanti nei professionisti con maggiore età ed esperienza lavorativa.

ABSTRACT

BACKGROUND: le aziende sanitarie sono responsabili della prevenzione del suicidio di paziente in ospedale attraverso l'elaborazione di protocolli che recepiscano la Raccomandazione Ministeriale n.4 (RM4) del Ministero della Salute, 2008. In Italia non ci sono scale di valutazione che indagano il livello di conoscenza della RM4. **Obiettivi:** Valutare il livello di conoscenza della RM4 da parte degli infermieri.

METODI: studio pilota condotto nel periodo tra Novembre 2023 e Dicembre 2023 in un campione di infermieri. Il questionario somministrato consisteva in 8 domande che indagavano il livello di conoscenza della RM4.

RISULTATI: 141 infermieri eleggibili hanno partecipato al questionario (90.4%). Di questi il 36.9% avevano età anagrafica tra i 30 e 40 anni e 48 intervistati avevano esperienza lavorativa minore di 10 anni. L'alpha di Cronbach della scala era 0,486. Il 62.4% del campione aveva un buon livello di conoscenza della RM4. Il rischio di non conoscere la RM4 è risultato significativamente alto per i soggetti con età superiore a 50 anni (RR=1.86; IC=1.04 – 3.34; p =.034); analogamente, il rischio di non conoscere la RM4 è risultato abbastanza alto per i soggetti con più di 30 anni di servizio (RR=1.80; IC=0.89 – 3.65; p =.101).

CONCLUSIONI: nonostante lo strumento necessiterebbe di una revisione più approfondita per una maggiore affidabilità, il livello di conoscenza della RM4 è risultato ottimale; le criticità emerse riguardano gli infermieri con età ed esperienza lavorativa avanzate. Urge sperimentare strategie formative per la prevenzione del suicidio di paziente in ospedale.

KEYWORDS: *Suicidio, Prevenzione, Infermiere, Conoscenza, Ospedali*

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BACKGROUND

Suicide risk prevention in healthcare facilities is essential to ensure the safety of care to prevent, manage and remove a risk situation that could cause serious harm or death to the patient. In general, suicide is not a very rare event: every year in the world more than 800,000 people and of these almost 45,000 in the United States die by suicide (1,2). Throughout the world in the last 45 years, the suicide rate has increased by 65%; furthermore, among individuals aged between 15 and 44, in both genders, suicide is considered one of the three main causes of death, attempted suicides are up to 20 times more frequent and, although the percentage of suicides has always been higher among elderly males, the rate has increased significantly among young people, who today represent the group at greatest risk, in a third of countries, regardless of personal finances (3). Italy, which is commonly considered one of the countries with medium and low risk of suicide, records a constant figure of about 4000 deaths per year: among the causes, more than 90% of suicide cases are associated with mental disorders (mainly depression and substance abuse) and the reasons lie in numerous socio-cultural factors, including social, economic, family or individual crisis (4,5).

The phenomenon of patient suicide in hospital during hospitalization or within 72 hours of discharge represents a particularly serious sentinel event for the Joint Commission; the Joint Commission defines a sentinel event as an event of severity, potentially avoidable, which can lead to death or serious harm to the patient, and which can recur in future circumstances (12). In Italy, suicide is the fourth most frequent sentinel event in hospitals, 40% of hospital suicides occur in a medical unit and 5% in a psychiatric unit; between January 2005 and December 2020, 967 suicides or attempted suicides were reported in hospital, of which 576 resulted in the patient's death, while the remaining 40% were due to major trauma following a fall, permanent disability, or severe coma after cardiopulmonary resuscitation (6). However, in order to reduce the number of suicides and/or suicide attempts of patients within the hospital, there are several screening tools in the literature for the assessment of suicide risk, such as the Columbia–Suicide Severity Rating Scale (32), with 20 items that investigates the mechanisms of suicide ideation and related behaviors, and the Beck Scale for Suicide Ideation - BSSI (31) which, through semi-structured interviews starting from 19 questions, investigates the elements that lead to suicide such as desire, preparation, intentionality, ideation, motivational drive. Furthermore, Italian hospitals, especially in the clinical areas at greatest risk of hospital suicide, such as the Psychiatric Diagnosis and Treatment Service (SPDC), the Oncology, Obstetrics and Gynecology Operating Units and the Emergency Department, are required to implement the Ministerial Recommendation no. 4 (MR4), promulgated in 2008 by the Ministry of Health, on the prevention of patient suicide; the general, health and departmental directorates assume responsibility for implementing the recommendation in all health areas in order to adopt all those effective strategies to prevent suicide including (7,8,34):

- Targeted assessment: family history, previous suicides and/or suicide attempts, suicidal ideation, adoption of a guide for interviewing the patient, concomitant pathologies, socio-cultural aspects, abuse of lethal psychotropic substances.

- Treatment paths: use of psychological and psychiatric counseling, involvement of specialists, family members and volunteers, promotion of personalized therapies, protected discharge and connection with territorial services.

- Organizational processes: informing staff about the risk of suicide, paying attention during internal

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transfers to patients at greater risk of suicide, avoiding leaving patients at risk of suicide alone.

- Structural and environmental interventions: safety devices, locks, surveillance cameras, alarms, railings, barriers on parapets, safety fixtures, use of non-hazardous furnishing materials such as glass and sharps, preventing access to dangerous materials such as ropes or drugs.

MR4, in terms of training, promotes continuous education of the entire multidisciplinary team, considering that the lack of skills and attitudes are barriers to the prevention of patient suicide in hospital (11). Most cases of suicide in hospital lead to the opening of criminal proceedings against healthcare personnel; In fact, in the Italian context, guidelines or recommendations have become a parameter for evaluating professional conduct: according to Law no. 24/2017 "Safety of care and of the assisted person, as well as in the matter of professional liability of healthcare professionals" there is no criminal liability for the professional if the event occurred due to his incompetence, if the guidelines have been adopted (8, 9). In this scenario, nursing education and training regarding the patient at risk of suicide appear to be fundamental for the prevention of suicide in hospital; however, the greatest limitation to suicide management seems to be the lack of specific training, especially for nurses working in hospitals, especially for the less experienced who require greater training in mental health, considering the numerous domains of suicide management (10).

In Italy there are no studies that investigate the knowledge and adherence of nurses to the ministerial recommendations of the Ministry of Health and above all there are no evaluation scales that can highlight the level of knowledge of nurses.

OBJECTIVES

The aim of the research is to investigate the level of knowledge of nurses on MR4 and therefore on the prevention of patient suicide in hospital; furthermore, the aim is to define the possibility of determining a study protocol that in the future can lead to the scientific validation of the instrument used for this research.

METHODS

The study was conducted following the guide "CONSORT 2010 Statement: extension to randomised pilot and feasibility trials" available on the website of the EQUATOR network that maintains a complete and updated list of guidelines for the writing of scientific articles addressed to authors, editors, developers, librarians and teachers (13).

Trial design and sample size

A pilot study was conducted between November 2023 and December 2023. In this study, convenience sampling was adopted: the sample size was calculated taking into account the "subject to item ratio" for validation studies according to the 5:1 rule of thumb of Costello & Osborne 2005 for exploratory factor analysis (EFA), according to the 10:1 rule of thumb of Kline 2011 for confirmatory factor analysis (CFA) and according to the 20:1 rule of Costello & Osborne 2003 for both EFA and CFA with a probability of error of 30% (14,15,16). The instrument used for data collection was characterized by 8 elements and, therefore, a sample was included with a number of participants ranging from 40/80 = 5:1/10:1 and 160 = 20:1.

Participants and data collection

For the study, 156 Italian nurses were contacted, easily reachable by the authors, through the instant messaging platforms Whats-app and Telegram. Nurses were included in the study if they met the

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following inclusion criteria: having provided direct patient care in Italian healthcare facilities during the study period, between November 2023 and December 2023. Nurses who do not work in Italy, who did not provide direct patient care and all nursing students were not contacted and therefore excluded. The questionnaire was sent on instant messaging platforms to the participants included in the study in electronic format via an access link; the Google Forms platform was used to collect data, which allows you to collect data through a survey or quiz. The data were collected in an Excel spreadsheet directly linked to the Google Forms platform; each participant was allowed to answer the questionnaire only once and participation was voluntary. All participants were able to read an information sheet that explained how to answer the questionnaire as well as the objectives of the study. The authors of the questionnaire were MC and VM

Interventions

A single evaluation group was considered for the study. The survey developed by the authors consisted of several questions divided into two sections: the first section concerned the collection of demographic data of the participants (gender, age, level of education, years of work experience, type of patients assisted); the second section, instead, consisted of the compilation of a questionnaire drawn up on the basis of the MR4 - Prevention of patient suicide in hospital, published by the Ministry of Health on 31/03/2008 on its institutional website (7). The questionnaire was characterized by 8 items with dichotomous Yes/No answers that investigated the level of knowledge of the nurses on the MR4 (knowledge of: MR number, adverse event, suicide risk factors, management responsibility, training on suicide prevention, risk of suicide in relation to the number of days of hospitalization, organizational processes, clinical areas). A panel of experts on MR4 evaluated the items of the questionnaire. First, a content validity study was performed in which each expert evaluated the relevance and clarity of each item by assigning a score from 1 to 4 (1- Not clear/relevant; 4- Very clear/relevant); scores of 4 were provided for all items. Subsequently, a face validity study of the questionnaire was performed to evaluate the intelligibility of the instrument and therefore an evaluation of semantic, idiomatic, experiential, conceptual equivalence of each item with satisfactory results (33). In case of a correct answer to the question, a score of 2 was assigned; on the contrary, in case of an incorrect answer to the question a score of 1 was assigned. Total scores ranged from 8 to 16; the knowledge cut-off was determined with a score higher than 12, considering the average between the minimum cumulative score, equal to 8, and the maximum cumulative score, equal to 16.

Statistical methods

Data analysis was performed blindly by a colleague not involved in the study and not informed about its purpose or the group of subjects to which the data belonged, using the Statistical Package for Social Sciences (SPSS) version 22 software (SPSS Inc., Chicago, Illinois, USA). For sociodemographic variables, the results were analyzed as absolute frequency and percentage; in addition, the number of correct answers for each type of question was expressed as absolute frequency and percentage. Continuous variables according to the predetermined knowledge cut-off were examined as absolute frequency and percentage for the sociodemographic variables age, years of work experience, type of patients assisted. In the reliability analysis of the questionnaire, Cronbach α and Pearson's linear correlation coefficient were used to determine internal consistency and homogeneity. To explore the connection between the variables studied and the total scores obtained, the chi-square test (χ^2) was used. Statistical tests were two-tailed and statistical significance was defined as $p < .05$.

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Ethical considerations

Recruited nurses were asked to give their consent to participate in the study and complete the questionnaire. The study protocol was presented to each participant through an information sheet and each participant was asked to answer the questions. In the information sheet the authors explained to participants that the answers to the questionnaire did not lead to the identity of the respondents since the forms did not collect the email addresses of the interviewees. The study protocol was in line with the Declaration of Helsinki, revised in 2013, and the Oviedo Convention for the Protection of Human Rights and Dignity of Human Beings regarding the Application of Biology and Medicine (1996). Participants completed the survey on a completely voluntary basis and had the option to remain anonymous. Given that the data were studied in aggregate form and that participants remained anonymous, the approval of an Ethics Committee was not necessary and the EU GDPR 2016/678 in force in Italy since 2018 does not apply to our study design.

RESULTS

156 nurses (100%) responded to the survey, of which 141 were eligible (90.4%). All nurses gave their consent to the processing of data in aggregate and anonymous form for purely statistical purposes.

Sociodemographic characteristics

The sociodemographic characteristics of the sample analyzed were described in Table 1. 66.7% of nurses (n=94) were female while 52 participants (36.9%) were aged between 30 and 40 years. 55.3% (n=78) had a Registered Nurse (RN), while the remaining 63 (44.7%) had a post-basic qualification (Master of Science in Nursing – MSN; Doctor of Philosophy - PhD). 48 interviewees (34.1%), however, had less than 10 years of work experience and 31.2% (n=44) had between 10 and 20 years of work experience. Finally, 82.3% of the subjects (n=116) directly assisted adult patients.

Table 1. Sociodemographic characteristics of the sample (N=141)

VARIABLE	RESULTS
Gender, n %	
Male	46 (32.6)
Female	94 (66.7)
Prefers not to answer	1 (0.70)
Age, n %	
< 30 y	20 (14.2)
30 – 40 y	52 (36.9)
41 – 50 y	35 (24.8)
> 50 y	34 (24.1)
Nurses' level of study, n %	
RN	78 (55.3)
MSN	62 (44.0)
PhD	1 (0.70)
Nurses' experience, n %	
< 10 y	48 (34.1)
10 – 20 y	44 (31.2)
21 – 30 y	24 (17.0)
> 30 y	25 (17.7)
Type of patients assisted, n %	
Adult	116 (82.3)
Pediatric	25 (17.7)

Definition of abbreviation: n= number; y= years; RN: Registered Nurse; MSN= Master of Science in Nursing; PhD= Doctor of Philosophy.

Reliability and correct answers

The total correlation scores of all the scale items were between 0.146 and 0.295 (Table 2). The Cronbach α coefficient was 0.486 and no scale item was to be eliminated with respect to the α coefficients obtained. The percentages of correct answers were optimal for

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the questions relating to the risk factors that can lead to suicide (66.0%), the importance of training (95.7%), the risk of suicide with respect to the number of days of hospitalization (74.5%), the importance of organizational processes (90.1%), the prevalence of suicide with respect to specific clinical areas (75.2%); on the contrary, there were low percentages of correct answers to the questions relating to knowledge of the number of the recommendation (15.6%), knowledge of the adverse event (11.3%), the importance of management responsibilities on suicide prevention (43.3%).

Table 2. Cronbach's α Coefficients of the MR4 Questionnaire and total item correlations (N=141)

Questionnaire	Correct answers	No correct answers	Total Item Correlation	Cronbach's α value when the item is deleted
Item 1: Number of MR	22 (15.6%)	119 (84.4%)	0.247	0.442
Item 2: Adverse event	16 (11.3%)	125 (88.7%)	0.239	0.448
Item 3: Suicide risk factors	93 (66.0%)	48 (34.0%)	0.208	0.461
Item 4: Managerial responsibility	61 (43.3%)	80 (56.7%)	0.237	0.448
Item 5: Training	135 (95.7%)	6 (4.3%)	0.295	0.449
Item 6: Suicide Time factor	105 (74.5%)	36 (25.5%)	0.254	0.437
Item 7: Organizational processes	127 (90.1%)	14 (9.9%)	0.236	0.451
Item 8: Clinical areas	106 (75.2%)	35 (24.8%)	0.146	0.485

Definition of abbreviation: n= number; MR: Ministerial Recommendation.

Knowledge of MR4

62.4% of the sample (n=88) had a level of knowledge of MR4 higher than the predetermined cut-off (Table 3). Regarding age, knowledge of MR4 was optimal for subjects up to 50 years of age; in particular, the prevalence rate of knowledge of MR4 was higher for subjects between 30 and 40 years of age for a percentage equal to 29% (n=52) with a significantly low risk of not knowing (RR=0.44; CI=0.25 – 0.79; *p*=.002). On the contrary, the risk of not knowing MR4 was significantly high for subjects over 50 years of age (RR=1.86; CI=1.04 – 3.34; *p* =.034) for a percentage equal to 53% (n=34). Regarding work experience, the risk of not knowing MR4 was quite high but not statistically significant for subjects with more than 30 years of service (RR = 1.80; CI = 0.89 – 3.65; p = 0.101), while subjects with less than 10 years of service had a greater knowledge of MR4 in 72.9% of cases (n = 35). Based on the type of patients assisted, the interviewees who assisted adult patients had a good knowledge of MR4 in 62.1% of cases (n=72); the risk of not knowing MR4 was low and not statistically significant for both nurses caring for adult patients (RR = 1.01; CI = 0.87 – 1.19; p = 0.857) and participants caring for pediatric patients (RR = 0.93; CI = 0.44 – 1.96; p = 0.857).

DISCUSSIONS

First, the data analysis was performed to determine the reliability of the instrument used for data collection with the aim of verifying whether there were the statistical requirements to validate a scale that measured the level of knowledge of the MR4 on the prevention of patient suicide in hospital. From the data obtained, it was highlighted that the reliability of the scale was low (α = 0.486) so as not to allow a validation study of this instrument in the future; in fact, to increase the alpha, more correlated elements should be added to the test and therefore more items that test the same concept in order to obtain highly consistent results (17).

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Table 3. Correlation between the levels of knowledge of MR4 and the variables of age, nurse experience and type of patients assisted (N=141)

VARIABLES	RESULTS			
	Don't know MR4 n. (%)	Know MR4 n. (%)	*RR (IC=95%)*	*P*
Age				
< 30 y (n=20)	8 (40.0)	12 (60.0)	1.11 (0.48 – 2.53)	0.81
30 – 40 y (n=52)	11 (21.2)	41 (78.8)	**0.44 (0.25 – 0.79)**	**0.002**
41 – 50 y (n=35)	16 (45.7)	19 (54.3)	1.40 (0.79 – 2.47)	0.252
>50 y (n=34)	18 (53.0)	16 (47.0)	**1.86 (1.04 – 3.34)**	**0.034**
Nurse's experience				
< 10 y (n= 48)	13 (27.1)	35 (72.9)	0.62 (0.36 – 1.05)	0.064
10 - 20 y (n= 44)	16 (39.4)	28 (60.6)	0.95 (0.57 – 1.58)	0.84
21 - 30 y (n= 24)	11 (45.8)	13 (54.2)	1.40 (0.68 – 2.91)	0.36
> 30 y (n= 25)	13 (52.0)	12 (48.0)	1.80 (0.89 – 3.65)	0.101
Type of patients assisted				
Adult (n= 116)	44 (37.9)	72 (62.1)	1.01 (0.87 – 1.19)	0.857
Pediatric (n= 25)	9 (36.0)	16 (64.0)	0.93 (0.44 – 1.96)	
Total nurses	53 (37.6)	88 (62.4)		

Despite the low levels of alpha that lead to a low reliability of the administered test and therefore the unreliability of the results obtained, the authors still set themselves the goal of analyzing the responses provided by the participants mainly for reactive purposes, to study any critical issues related to knowledge of MR4 and to investigate the practical implications that result in terms of prevention of hospital patient suicide. Compared to the predetermined cut-off in which knowledge was optimal with scores equal to or greater than 12, the study demonstrated that 62.4% of the total sample knew MR4 and therefore the strategies for preventing hospital patient suicide; in fact, nurses have a high exposure to people vulnerable to suicide, being always on the front line in providing health care in different health contexts in which traumatic events and stressful experiences during hospitalization increase the risk factors for suicide (18,19,20). In particular, subjects aged between 30 and 40 years showed a good knowledge of the MR4: the statistically significant low risk of not knowing the recommendation was in line with some studies in the literature which show that younger staff showed greater competence and a more favorable attitude towards suicide prevention, being more receptive to new ideas, more empathetic towards patients with suicidal intentions and more passionate about their work (21,22). However, the study highlighted statistically significant results among nurses aged over 50 years who presented a fairly high risk of not knowing the MR4. Similarly, the risk of not knowing the recommendation, up to approximately twice, was highlighted in subjects with seniority of service greater than 30 years, demonstrating a concomitance between advanced age and marked work experience; These data seem to agree with a study conducted in Taiwan, which found that older and more experienced nurses demonstrated poorer knowledge, self-efficacy and attitudes towards suicide prevention (24).

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Despite being in an ideal position to intervene and implement preventive measures, nurses often lack adequate training in suicide prevention (23): the importance of continuous investment in training allows for updating professional skills, improving risk awareness and adopting safer working practices; [25, 26] in addition, many studies have highlighted the specific need for training to address negative attitudes, stigma and the resulting suboptimal quality of care as well as to improve nurses' confidence when working with vulnerable individuals (27). At the corporate level, strategic directorates are responsible for developing internal protocols for healthcare personnel in compliance with ministerial recommendations; However, literature shows that company protocols are not sufficient to prevent patient suicide in hospital since nurses may not necessarily be aware of such protocols if training courses are not carried out that can improve staff self-efficacy and attitudes towards suicide prevention (28,29,30).

Limitations

The research highlighted important limitations. The instrument, presenting low alpha levels, is not validable in future studies; furthermore, given the unreliability of the results in line with the low reliability of the instrument, the use of the scale by managers to investigate the levels of knowledge of MR4 in hospital is not recommended. The multidimensional component of MR4, based on the prevention strategies of all factorial dimensions of suicide, makes it difficult to define a scale that can study the level of knowledge of the recommendation. However, despite the limitations in terms of reliability and coherence and considering the absence of validated instruments in the literature, the questionnaire still allowed the authors to study the level of knowledge of MR4; it is therefore believed that the instrument can at least be used to experiment whether a group of professionals needs training on the topic.

CONCLUSIONS

The study highlighted a good level of knowledge of MR4. The critical issues that emerged concerned subjects with advanced age and with thirty years of work experience in which lower levels of knowledge were recorded. Given the importance of the topic and given the need to be compliant with the recommendations, with the research study it was considered appropriate to enrich the literature and provide the strategic directions of a tool that would allow them to evaluate the level of knowledge of MR4 on the prevention of patient suicide in hospital. The tool used for data collection needs a more in-depth review to ensure greater reliability and precision; at the same time, with this study the foundations are laid to pave the way for new studies and insights that, on the one hand, highlight the criticality of this problem, and on the other, promote effective strategies to improve the knowledge and training of nursing staff in this delicate and crucial area for public health.

Data Availability

The datasets used for the study are maintained by MC and VM and are available upon reasonable request.

Ethical approval

The data were collected in a completely anonymous form. Therefore, the approval of an Ethics Committee was not necessary and the EU GDPR 2016/678 in force in Italy since 2018 does not apply to our study design. However, interviewees were asked to give informed consent before participating in the study and completing the questionnaires. The consents obtained were archived by the author MC and VM and available upon reasonable request.

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Conflict of Interest

The authors declare that they have no conflicts of interest.

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Author Contributions

All authors contributed equally to the manuscript and read and approved the final version of the manuscript. MC: First author, principal investigator, and project manager; DD: Review of the article; CM: Review of the article; CF: Direct participation in drafting, reviewing the article, and writing the results section and tables; SCP: Direct participation in drafting and reviewing the article; SG: Direct participation in drafting and reviewing the article; LM: Direct participation in drafting and reviewing the article; AP: Direct participation in drafting and reviewing the article; LP: Direct participation in drafting and reviewing the article; NC: Direct participation in drafting and reviewing the article; VM: Writing the study protocol and writing the results section and tables.

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APPENDIX

MR4 QUESTIONNAIRE - NURSES' KNOWLEDGE ON THE PREVENTION OF PATIENT SUICIDE IN HOSPITALS

Study Eligibility

Consent to participate in the survey?

- Yes
- No

Have you worked as a nurse in the last 12 months in direct patient care?

- Yes
- No

Section 1: Socio-demographic characteristics

Gender:

- Male
- Female
- Prefers not to answers

Age (numeric values only): _____

Level of study:

- Registered Nurse (RN)
- Master of Science in Nursing (MSN)
- Doctor of Philosophy (PhD)

Years of work experience (numeric values only): _____

Type of patients assisted:

- Adult
- Pediatric

Section 2: MR4 Questionnaire (*correct answer)

1. Does the Ministerial Recommendation for the prevention of suicide of patients in hospital correspond to Recommendation no. 6?
   - Yes
   - No*
2. Does the suicide of the patient in the hospital represent an adverse event?
   - Yes
   - No*
3. Does the prevention of patient suicide in the hospital pass only through the identification of the patient's risk factors?
   - Yes
   - No*

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4. Aren't strategic directions responsible for implementing the recommendation?
    - Yes
    - No*
5. Can staff training reduce patient suicide episodes in hospital?
    - Yes*
    - No
6. Is the patient's risk of suicide in hospital maximum only in the first days of hospitalization?
    - Yes
    - No*
7. Can organizational processes help to avoid the occurrence of the suicide event of patients in hospital?
    - Yes*
    - No
8. Is the suicide event of patients in the hospital more likely in some clinical areas?
    - Yes*
    - No

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