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ORIGINAL ARTICLE

Nurses' knowledge about palliative care in a critical care unit

A. Sesma-Mendaza[a,*], M. Aranguren-Sesma[a], F. Estraviz-Pardo[a], E. Lizarazu-Armendáriz[b], R. Goñi-Viguria[c]

[a] *RN por la Universidad de Navarra, Enfermera de la Unidad de Cuidados Intensivos, Clínica Universidad de Navarra, Pamplona, Spain*
[b] *RN por la Universidad Pública de Navarra, Enfermera de la Unidad de Cuidados Intensivos, Clínica Universidad de Navarra, Pamplona, Spain*
[c] *MSN por la Universidad de Navarra, Enfermera de Práctica Avanzada del Área de Críticos, Clínica Universidad de Navarra, Pamplona, Spain*

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Abstract
Introduction and objective: Patients admitted to the Critical Care Unit (CCU) have a high mortality rate due to their complexity. Palliative care (PC) is a key aspect that can improve patient care. Because of the essential role of the nurse in providing this care, training, and including it in daily practice are needed.

Our objective was to review the level of knowledge among the nurses in the CCU regarding PC and assess whether there is an association between each of the study variables.
Methodology: We performed a descriptive observational cross-sectional study in the CCU of a tertiary level university hospital. The questionnaire Palliative Care Quiz for Nurses, previously validated and translated into Spanish, was used. This is a self-administered questionnaire consisting of 20 multiple-choice questions (True/False/Do not know–Do not answer) which evaluates three aspects of PC: philosophy, psychosocial and control of pain and other symptoms. In addition, sociodemographic data was collected. Descriptive and inferential statistics were used, a $p < .05$ was considered statistically significant in all cases.
Results: The questionnaire was administered to 68 nursers, with an average age of 34.98 ± 12.12 years, and 13.00 ± 11.75 years of professional experience. Twelve nurses have Master studies and 28 nurses have received training in PC. The percent of correct answers of the questionnaire was 56.98%. There were no statistically significant differences between the total average score and the variables studied. However, looking at each aspect on the scale, an association was found between PC training and control of pain and other symptoms ($p = .033$).

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* Corresponding author.
E-mail address: asesmam@unav.es (A. Sesma-Mendaza).

Conclusion: Critical care nurses have a basic knowledge of PC, it being insufficient in the psychological sphere. Developing a training programme which identifies misconceptions and training deficits might improve the management of symptom control in palliative care patients, quality of care and its application.

PALABRAS CLAVE
Cuidados paliativos;
Unidad de cuidados críticos;
Formación en enfermería;
Cuidado de enfermería

Conocimientos de las enfermeras acerca de los cuidados paliativos en un área de críticos

Resumen
Introducción y objetivos: Los pacientes que ingresan en las áreas de críticos (AC) tienen alta tasa de morbi-mortalidad debido a su complejidad. Los cuidados paliativos (CP) se presentan como un componente clave y pueden ayudar a mejorar el cuidado del paciente. La enfermera es esencial para la administración de estos cuidados; para ello, es necesario tener formación y saber integrarlos en la práctica diaria.

El objetivo fue examinar el nivel de conocimientos de las enfermeras del AC acerca de los CP, y evaluar si existe asociación entre cada una de las variables estudiadas.
Metodología: Estudio observacional descriptivo transversal en el AC de un hospital universitario de nivel terciario. Se utilizó el cuestionario *Palliative Care Quiz for Nurses*, traducido y validado al español. Es un cuestionario auto-administrado que consta de 20 ítems de respuesta múltiple (verdadero/falso/no sabe-no contesta) que evalúa tres aspectos de los CP: filosofía, psicosocial, y control del dolor y otros síntomas. Además, se recogieron datos sociodemográficos. Se realizó estadística descriptiva e inferencial, considerándose estadísticamente significativo un valor de $p < 0,05$ en todos los casos.
Resultados: El cuestionario se administró a 68 enfermeras, con una edad media de $34,98 \pm 12,12$ años, y $13,00 \pm 11,75$ años de experiencia profesional. Doce enfermeras tenían formación de Máster y 28 enfermeras habían recibido formación en CP. El porcentaje de aciertos del cuestionario fue de 56,98%. No hubo diferencias estadísticamente significativas entre la puntuación media total y las variables estudiadas. Al analizar los aspectos de la escala, se encontró asociación entre la formación en paliativos y el control de síntomas ($p = 0,033$).
Conclusión: Las enfermeras del AC tienen un conocimiento básico sobre los CP, siendo el aspecto psicosocial del mismo insuficiente. Un programa de formación que identifique conceptos erróneos y déficits formativos podría mejorar el control de síntomas de los pacientes que reciben CP, la calidad de estos cuidados y su integración.

What is known

The Critical Care Unit sees the highest number of deaths, as the patients admitted have pathologies with high mortality and morbidity rates. In this context, intensive care societies such as The American College of Critical Care Medicine, Society of Critical Care Medicine, European Society of Intensive Care Medicine, and the Spanish Society of Intensive Care Nursing and Coronary Units recommend the rapid implementation of palliative care, as a key component to improve patient care. The nurse is in a privileged position to administer this care, but there is evidence that lack of training is a barrier to its implementation.

What it contributes

This study aims to establish the level of knowledge of nurses in a critical care area in relation to palliative care. It also aims to detect misconceptions in the field of palliative care. Determining these aspects

will enable the creation of a training plan to address these shortcomings and improve care for the critically ill patient.

Implications for practice

This study enabled us to determine nurses' level of knowledge about palliative care, and detect misconceptions in order to address them. Being aware of nurses' level of knowledge about palliative care and misconceptions helps us deepen our understanding of the importance of this aspect in the care of the critically ill patient; multidisciplinary teams require training. Nurses' basic level of knowledge implies that undergraduate training should be modified to include specific palliative care training programmes in intensive care. This will improve symptom control in palliative care patients and help improve the quality of palliative care and its integration into daily practice.

Introduction

The critical care unit (CCU) is a structured area that provides specialist care to patients in a critical, life-threatening condition, and uses increasingly advanced technologies to preserve life.[1] It requires highly trained health professionals, and multidisciplinary teamwork.[2]

Technological improvement leads to a gradual change in operational dynamics. As a consequence of this change, decisions need to be made both at the end of life and during the stay of critically ill patients. Despite the advances in healthcare in recent decades, the literature reports mortality rates in critical care units of 16%–20%, making them hospital areas with the highest number of deaths.[3–5] This is partly because the pathologies of the patients admitted to these units have a high mortality and morbidity rate.[2,5] The objective of intensive care is to reduce this rate and not so much on increasing or prolonging survival.[2] It is essential, therefore, that treatment be adapted to each patient and their disease course so that we do not lose sight of the ethical basis of care.[2]

In addition, many critically ill patients suffer from symptoms such as pain, respiratory distress, and anxiety.[6–8] Given the complexity of these patients, treatment and decisions must be individualised.[2] In this context, intensive care societies such as the American College of Critical Care Medicine, the Society of Critical Care Medicine, the European Society of Intensive Care Medicine and the Spanish Society of Intensive Care Nursing and Coronary Units recommend the rapid implementation of palliative care (PC) as a key component that can help improve patient care.[9–11]

According to the World Health Organisation, palliative care is ''an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial, or spiritual''.[12]

Palliative medicine can be integrated with intensive care medicine. Relieving pain and alleviating suffering, the goals of palliative care, are delivered simultaneously with treatment aimed at healing.[2,8,13] Furthermore, it is described in the literature that patients in critical care units and their families also have significant palliative care needs.[6,8,13]

In the critical care unit, the nurse is considered the cornerstone of palliative care.[14] The importance of their role is their continuous presence, as primary caregivers in charge of implementing and often sharing the patient's last moments along with their family.[3,13,15] Critical care nurses are well positioned to create adequate space and opportunities to implement palliative care,[16,17] but the literature reports that they have difficulty in delivering it and that their lack of training is a major barrier.[6,15,17–20]

We decided to conduct this research study to examine the level of knowledge of nurses in critical care units about palliative care.

Methodology

A cross-sectional descriptive observational study conducted in the CCU of a 300-bed tertiary level university hospital. The CCU comprises the intensive care unit (ICU) and a special hospital area that includes the coronary unit, stroke unit, and a more complex internal medicine ward. These units admit around 1000 patients per year.

The study population was the nursing staff who were working during the month of January 2020 in the critical care unit (69 nurses), and who agreed to answer the questionnaire. Of the 69 nurses, 10 were undergoing specialist training. This training includes a postgraduate academic programme with content in intensive care or cardiology, and a 12-month practical programme in the critical care or cardiology unit. All the others had postgraduate training in intensive care or cardiology. The sample selection was based on convenience.

The research team prepared a document comprising two sections:

- Sociodemographic data sheet, which included age, educational level, years of professional experience, type of working day, training in palliative care, and hours of training.
- The Palliative Care Quiz for Nursing (PCQN) questionnaire translated and validated in Spanish.[21] This is a self-administered questionnaire consisting of 20 multiple-choice items (true/false/do not know/no answer) that assesses three aspects of palliative care: philosophy and principles of palliative care (4 items: 1, 9, 12, and 17), psychosocial aspects (3 items: 5, 11, and 19) and control of pain and other symptoms (13 items). According to the authors, the PCQN has proved a useful instrument to assess knowledge and identify misconceptions in the field of palliative care; it has an internal consistency of .78 measured with Cronbach's test and an overall content validity index (CVI) of .83.

We translated the numerical values into qualitative interpretations for better comparison and interpretation of the

Table 1 Sociodemographic data.

Sociodemographic data	Mean ± SD	Number	Percentage (%)
Age	34.98 ± 12.2		
Level of education			
Diploma/degree		56	82.4%
Masters		12	17.6%
Years of professional experience	13 ± 11.7		
<5 years		27	39.7%
6–20 years		20	29.4%
>20 years		21	30.9%
Working hours			
Full time		35	51.5%
Part time		33	48.5%
Training in palliative care			
Yes		29	42.6%
≤5 h		17	60.7%
5–10 h		4	14.3%
10–15 h		4	14.3%
15–20 h		1	3.6%
≥20 h		2	7.1%
No		39	57.4%

results. A score of 0–4.99 was considered a fail, between 5 and 6.99 a pass, and above 7 an outstanding score.

Data collection

The research team collected the data during January 2020, with the nurses who agreed to participate voluntarily. The objective and importance of the study was explained, and their participation was requested. If they gave their free consent, a member of the research team explained how to fill in the questionnaire and collected the completed questionnaire.

Data analysis

Descriptive and inferential statistics were used to analyse the quantitative data. Values were expressed as mean and standard deviation (SD), and categorical variables as numbers and percentages. To analyse differences between two groups, the student's t-test was used for unpaired samples, provided that normality was demonstrated (Shapiro–Wilks test); otherwise, a non-parametric test was used (Mann–Whitney U test). To analyse comparisons between more than two groups, the ANOVA test was used, provided that the variable followed a normal distribution, while in the case of a non-parametric distribution, the Kruskall–Wallis test was used. A p value <.05 was considered statistically significant. Statistical analysis was performed using IBM SPSS (version 20.0).

Ethical considerations

The hospital ethics committee gave their approval to conduct the study. All respondents were guaranteed anonymity, complete confidentiality of the data, and the questionnaires would be destroyed at the end of the research study (Organic Law 3/2018, of 5 December, on Personal Data Protection and Guarantee of Digital Rights). The respondents gave their written consent.

Results

Of the 69 nurses in the area, 68 answered the questionnaire, a response rate of 98.55%. Table 1 shows the sociodemographic characteristics and aspects related to the level of experience and training in palliative care of the respondents.

The mean score of the questionnaire was 5.69/10 (SD: 1.23, min 2.5–max 8.5). Thirteen nurses (19.1%) scored less than 5 (fail); 40 nurses (58.8%) scored between 5 and 6.99 (pass), and 15 nurses (22.1%) scored 7 or more (outstanding).

When relating the sociodemographic variables to the mean score and its qualitative interpretation, there were no statistically significant differences (Table 2).

When analysing the subscales with the sociodemographic variables, an association was found between training in palliative care and symptom control (p = .033) (Table 3). Nurses with palliative care training had a significantly higher percentage of correct scores for this subscale.

The percentage of correct and incorrect answers for each of the questions in the questionnaire is shown in Table 4.

The questions with the highest percentage of correct answers were 1, 4, 8, and 15. The questions with the lowest number of correct answers were 5, 14, and 16.

After showing the items of the questionnaire, Table 5 shows the mean score of the subscales of the PCQN. The highest score corresponds to the questions relating to the philosophy and principle of palliative care, and the lowest to the psychosocial aspects.

Table 2 Relationship between sociodemographic variables and questionnaire score.

Sociodemographic variables	Mean ± SD	p	Qualitative interpretation			p
			Fail	Pass	Outstanding	
Years of experience						
≤5 years (n = 27)	5.44 ± 1.12	p = .323	18.5%	70.4%	11.1%	p = .362
6–20 years (n = 20)	5.75 ± 1.32		25%	45%	30%	
≥20 years (n = 21)	5.97 ± 1.25		14.3%	57.1%	28.6%	
Level of education						
Diploma/degree (n = 56)	5.72 ± 1.19	p = .724	17.9%	62.5%	19.6%	p = .400
Masters (n = 12)	5.58 ± 1.42		25%	41.7%	33.3%	
Working hours						
Full time (n = 35)	5.52 ± 1.14	p = .244	14.3%	71.4%	14.3%	p = .091
Part time (n = 33)	5.87 ± 1.31		24.2%	45.5%	13.3%	
Training in palliative care						
Yes (n = 28)	5.98 ± 1.28	p = .152	17.9%	50%	32.1%	p = .239
No (n = 40)	5.50 ± 1.17		20%	65%	15%	

Table 3 Relationship between sociodemographic variables and subscales.

Sociodemographic variables	PCQN subscale (Mean ± SD)					
Years of experience	Control of pain and other symptoms	p	Psychosocial aspects	p	Philosophy and principles of palliative care	p
≤5 years (n = 27)	53.84 ± 11.60	*p* = .225	36.56 ± 25.28	*p* = .725	71.29 ± 27.40	*p* = .630
6–20 years (n = 20)	59.60 ± 15.15		30.00 ± 21.35		71.25 ± 21.87	
≥ 20 years (n = 21)	58.60 ± 16.40		36.50 ± 25.60		78.57 ± 16.36	
Level of education						
Diploma/degree (n = 56)	57.00 ± 13.75	*p* = .992	33.90 ± 24.19	*p* = .939	74.10 ± 22.30	*p* = .655
Masters (n = 12)	57.05 ± 17.49		33.33 ± 24.60		70.83 ± 25.70	
Working hours						
Full time (n = 35)	56.70 ± 13.46	*p* = .532	31.42 ± 22.7	*p* = .454	69.28 ± 27.17	*p* = .256
Part time (n = 33)	57.34 ± 15.39		36.36 ± 25.5		78.03 ± 16.24	
Training in palliative care						
Yes (n = 28)	62.08 ± 14.34	***p*** **= .033**	29.76 ± 2.84	*p* = .270	75.00 ± 21.50	*p* = .791
No (n = 40)	53.46 ± 13.37		36.67 ± 4.80		72.50 ± 23.88	

In bold, statistically significant value.

Discussion

The nurses' mean PCQN questionnaire score is similar to that found in the literature.[19,21–24] This result is higher than that obtained in a study in which oncology and surgical ward nurses participated,[14] another study that was conducted with students,[25] and the last study which was conducted with nurses working in oncology and ICU units.[20] However, it is lower than the research study conducted on students by Pope.[26] Despite these findings, the scores reflect a basic knowledge of palliative care, and suggest that the care activity of nurses in these units does not include PC.[20] It is also striking that, from the literature reviewed, only two studies were conducted in critical care units. This may be because these units are oriented towards supporting vital functions, attending to acute situations thanks to the combination of technologies and highly qualified personnel,[2,16,17] leaving palliative care in the background.[18,20] Nurses working in this field are trained in procedures and protocols to know how to act in situations that compromise the patient's life,

Table 4 Correct and incorrect answers to questionnaire.

PCQN questions	Correct	Incorrect	DK/NA
P1: Palliative care is appropriate only in situations where there is evidence of a downhill trajectory or deterioration (F)	67 (98.5%)	1 (1.5%)	0
P2: Morphine is the standard used to compare the analgesic effect of other opioids (T)	31 (45.6%)	9 (13.2%)	28 (41.2%)
P3: The extent of the disease determines the method of pain treatment (F)	49 (72.1%)	18 (26.5%)	1 (1.5%)
P4: Adjuvant therapies are important in managing pain (T)	65 (95.6%)	1 (1.5%)	2 (2.9%)
P5: It is crucial for family members to remain at the bedside until death occurs (F)	2 (2.9%)	66 (97.1%)	0
P6: During the last days of life, the drowsiness associated with electrolyte imbalance may decrease the need for sedation (T)	21 (30.9%)	36 (52.9%)	11 (16.2%)
P7: Drug addiction is a major problem when morphine is use don a long-term basis for the management of pain (F)	34 (50%)	26 (38.2%)	8 (11.8%)
P8: Individuals who are taking opioids should also follow a bowel regime (T)	68 (100%)	0	0
P9: The provision of palliative care requires emotional detachment (F)	51 (75%)	13 (19.1%)	4 (5.9%)
P10: During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnoea (T)	42 (61.8%)	14 (20.6%)	12 (17.6%)
P11: Men generally reconcile their grief more quickly than women (F)	42 (61.8%)	5 (7.4%)	21 (30.9%)
P12: The philosophy of palliative care is compatible with that of aggressive treatment (T)	54 (79.4%)	6 (8.8%)	8 (11.8%)
P13: The use of placebos is appropriate in the treatment of some types of pain (F)	38 (55.9%)	19 (27.9%)	11 (16.2%)
P14: In high doses, codeine causes more nausea and vomiting than morphine (T)	17 (25%)	10 (14.7%)	41 (60.3%)
P15: Suffering and physical pain are synonymous (F)	60 (88.2%)	6 (8.8%)	2 (2.9%)
P16: Demerol is not an effective analgesic in the control of chronic pain (T)	8 (11.8%)	29 (42.6%)	31 (45.6%)
P17: The accumulation of losses renders burnout inevitable for those who seek work in palliative care (F)	30 (44.1%)	23 (33.8%)	15 (22.1%)
P18: Manifestations of chronic pain are different from those of acute pain (T)	55 (80.9%)	8 (11.8%)	5 (7.4%)
P19: The loss of a distant or contentious relationship is easier to resolve than the loss of one that is close or intimate (F)	26 (38.2%)	35 (51.5%)	7 (10.3%)
P20: The pain threshold is lowered by anxiety or fatigue (T)	24 (35.3%)	38 (55.9%)	6 (8.8%)

and to prevent potential complications resulting from their acute condition and does not extend to the terminal patient and family.[3,16] Reviewing different academic programmes in intensive care,[27–31] we observed a gap in training in palliative care. It is of vital importance to start including palliative care in critical care units.

There is now a change of horizon in terms of the care provided in ICU. We find a patient model that also encompasses patients who are in less reversible situations due to advanced age or underlying chronic diseases.[15,16,18] Wolf et al.[9] argue that PC is an essential component of ICU care and many professional societies recommend it should be included in ICU care.[13,15] A training programme would facilitate the incorporation of PC into daily practice.[3,15,17,18] This could improve the quality of patient care, optimising the management of physical symptoms and psychosocial and spiritual needs, thereby also improving the care of those who die.[2,5,32]

We found no statistically significant differences when we analysed professional experience with the mean score of the questionnaire. Our results are consistent with those found in the literature[18–22]; however, when studying the different groups, we observed that the professionals with the least experience were those with the lowest scores. This may be because, as Patricia Benner states in her from novice to expert theory,[33] the novice nurse needs experience to acquire competencies, and therefore there are skills that can only be acquired through practice. As the nurse gains experience, clinical knowledge becomes a mixture of practical and theoretical knowledge. Therefore, the most experienced professionals are those obtaining the highest

Table 5 Subscale scores.

PCQN subscales	Score (Mean ± SD)
Control of pain and other symptoms	57.01 ± 14.32
Psychosocial aspects	33.82 ± 24.08
Philosophy and principles of palliative care	73.52 ± 22.80

score in the questionnaire and the highest percentage of pass and outstanding results.

In our study, no significant correlation was found between the PCQN score and the level of education of the nurses as in the study by Iranmanesh et al.[20] This finding could be because the palliative care training of nurses at all levels of their education is similar.

We found no association either when analysing PC training and the mean score, as in several studies,[19,22] and in contrast to the findings of Abudari et al.[14] and Chover-Sierra and Martínez-Sabater.[19] However, we did observe that nurses with training in palliative care obtained the best scores. Reviewing the hours of training, we observed that only 10.7% of the nurses who had received training completed more than 15 h, and therefore we assume that the training is insufficient to provide sufficient knowledge and attitudes to bring about changes in practice. There is a positive correlation between training and the subscale ''Control of pain and other symptoms''. Several authors[22,25] report that the contents of palliative care training programmes focus mainly on aspects such as symptom management and that content related to psychosocial aspects appears less frequently. In our research study, as in the literature reviewed,[19,22] we verified that the poorest results corresponded to the psychosocial aspects of palliative care, which implies the need to study these aspects in depth when developing training programmes.[15,25] The philosophy and principles of palliative care subscale scored the best. This may be because in our unit there has always been concern for holistic patient care[34–36] and we have developed a person-centred model of care defined by the institution.[37]

Analysing the answers to our questionnaire, it is noteworthy that question 5, the correct answer to which is false (''It is crucial for family members to remain at the bedside until death occurs''), was answered incorrectly by the highest percentage of nurses, as in the literature reviewed.[19,21,22] This may be due to the belief that accompanying the family at the end of life is paramount, emphasising the importance of presence and participation in care.[15–17] Furthermore, Chover-Sierra et al.[22] put the high percentage of incorrect answers down to the fact that it does not seem to be clear whether the item refers to the specific moment of death or to the last days of the patient's life, and this may lead to confusion. Each professional's perception determines the attitude they will take, which is an added obstacle to an effective approach to palliative care.[20] Nurses are in a unique position to establish effective communication with the patient and family given their constant proximity and because they care for and accompany the patient 24 h a day. This closeness helps communication with the family so that their wishes in the event of the patient's death can be established.

In relation to question 13 (''The use of placebos is appropriate in the treatment of some types of pain''), it is worth noting that almost half the respondents were unaware that placebo is not appropriate for the treatment of some types of pain. The American Society for Pain Management Nursing argues that placebo should not be used as a method of pain management for patients, regardless of their age or diagnosis. The only justifiable use of placebo is in patients participating in a blinded clinical trial.[38] This stresses that placebo should not be used for either pain assessment or pain management. The nurse is in a privileged position to protect the patient from such unethical practices.[38]

It is noteworthy that the questions answered both correctly and incorrectly relate to the administration of drugs. Question 8, whose correct answer is true (''Individuals who are taking opioids should also follow a bowel regime''), has the highest percentage of correct answers, as in the literature reviewed.[14,19,21,23] We believe this may be due to the common use of morphine in intensive care. However, when asked about other opioids such as Demerol or codeine (questions 14 and 16, true being the correct answer for both), most of the nurses did not know the answer, which implies a lack of familiarity with the drug that is not routinely used in the unit, as is the case with Pope[26] in their research. It is therefore important that nurses receive education and training in the importance of comfort and end-of-life care, including the varied, accurate, and appropriate administration of analgesics and sedatives.[15,20]

This study has methodological limitations. It was conducted in a single centre and the sample was small, and therefore the results could not be extrapolated. In addition, the population studied had the same postgraduate training programme, and therefore the diversity in terms of training is smaller. In relation to the questionnaire, one of the limitations is that the items relating to the psychosocial aspects subscale can be interpreted differently depending on the culture of each respondent. It is advisable to conduct future research studies in different centres with different populations, to achieve greater diversity and expand the data.

Conclusion

Critical care nurses have a basic knowledge of palliative care; however, the psychosocial aspect of their knowledge of palliative care is insufficient. A training programme that identifies misconceptions and training deficits could improve control of symptoms in palliative care patients. This would help improve the quality of palliative care and its incorporation into daily practice.

Conflict of interests

The authors have no conflict of interests to declare.

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