ARTIGO ORIGINAL

Knowledge and management of the blue code by the nursing professional in the establishments in the South region of Puno, Peru 2023

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ABSTRACT

The main objective of this study was to determine the relationship between knowledge and management of the blue code by the nursing professionals of the San Román Health Network. Regarding the methodology, it was a study with a quantitative approach, non-experimental design and cross-sectional. Likewise, it had a descriptive – correlational scope; whose population was made up of 200 appointed and hired nurses, as for the sample, it was made up of 160 participants, who were chosen through non-probabilistic sampling at the convenience of the author. Regarding the results, it was observed that 75.6% of nurses perceive high levels of knowledge and 100% have good blue key management. Likewise, it was verified that there is no significant relationship between the variables, since the (Spearman's Rho = 0.074 and the bilateral significance P – resulting value was = 0.352 > 0.05); Therefore, the study concludes indicating that knowledge is not related to the management of the blue code by the nursing professionals of the San Román 2023 Health Network.

Keywords: knowledge, blue key, nurses

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INTRODUCTION

The obstetric keys are a system of roles and functions that allow effective communication and coordinated work of a multidisciplinary team made up of health professionals trained in these keys who, in coordinated action, seek to prevent maternal death. (Ministry of Public Health, 2017); Likewise, it is a rapid response system (SRR) or obstetric keys, acting quickly with a single call, saving time, eliminating delays in terms of availability of personnel, equipment, materials, supplies and medications, this strategy strengthens teamwork facing an obstetric emergency, through a coordinated work, standardization of protocols and continuous training (PAHO, 2019).

At a global level, in 1792 the first term used was military triage, which dates back to the prioritization of victims on the Napoleonic battlefields. In Spain, in 2000, codes and hospital triage were implemented (Suárez et al., 2019), in Peru also in the year 2000, the management of obstetric emergency codes was developed, favoring a better response by emergency services with the functions clearly defined by each worker in the team (Vásquez et al., 2019). This rapid response system developed three keys and they are: Red key: management of hypovolemic shock; blue key: management of hypertensive crisis of pregnancy, yellow key: management of septic shock (Minsa, 2017).

Blue key is any hypertensive disease of pregnancy after 20 weeks of gestation until the puerperium classified into preeclampsia and eclampsia and HELLP syndrome (Guevara Ríos & Meza Santibáñez, 2018).

In the world, it is the leading cause of maternal death in developed countries in addition to being the important cause of maternal, fetal and neonatal morbidity and mortality, cerebrovascular and metabolic accidents, heart failure and 10 times the risk of end-stage renal disease (Guevara, 2019).).

In Peru, from 2012 to 2018, severe preeclampsia, HEELP syndrome and eclampsia were the first cause of extreme maternal morbidity and mortality of an irreversible nature with multiorgan damage to the mother and fetus (INMP, 2019).

The competencies that the nurse must possess in the face of a blue key emergency are: knowledge and management, the latter made up of abilities, skills and behaviors. Thus, López (2022) found in his study population that nurses know the correct application of obstetric keys, effectively reducing maternal complications, despite

the high maternal risk, favoring the adequate termination of pregnancy and safeguarding the life of the mother and the newborn.

Another study concludes that the level of knowledge is significantly related to maternal risks in the management of obstetric keys, in turn finding that the majority of nursing staff are unaware of the protocols and guidelines (Caicedo, 2020)

Likewise, the use of the Score Mom obstetric keys tool at the national level has given good results to prevent deaths of the mother/fetus in the emergency and emergency unit (Tenemasa, 2023). Now, as the coordination was carried out to carry out this research work, it was observed that in the health establishments of the first level of care that belong to the San Román Health Network there is no exclusive emergency service for care. of blue key cases, there are General Medicine services, obstetrics, health programs, among others, blue key cases are attended to by obstetrics offices and referred to the Carlos Monge Medrano Hospital; On the other hand, the nursing staff is not involved in the care of blue key emergencies, they care for newborn children, Growth and Development, in addition to other programs at the first level of care; Likewise, they apparently are unaware of the existence of protocols, of the blue briefcase with the medications and supplies that they must have and the sequence for the attention of a blue code, it has been observed that the blue code alarm is not activated since the attention of the obstetric emergencies are only carried out by doctors and obstetricians, it has also been observed that it does not have a multidisciplinary team, which results in poor teamwork, with the leader not being found and the one who activates the emergency alarm by blue code, since it is a multidisciplinary work that involves not only the obstetrics and medical staff, but also the nursing professional.

For all the above, the concern arises to carry out this research work and determine the relationship that exists between the knowledge and management of the blue code of the nursing professional in the southern region of Puno Peru, 2023. Likewise, the The results of this research work will be used to implement permanent training workshops in the management of the blue code, improve processes and knowledge of protocols, improve the leadership and performance of the nurse, reinforce teamwork, avoid complications and maternal deaths.

MATERIALS AND METHODS

The present research work was a non-experimental study, since there is no active and deliberate manipulation of any variable, it is also cross-sectional, because the data were collected at a single moment or at a single time (Fernández & Baptista, 2014). Regarding the type of study, it gives rise to a quantitative and correlational research, because it seeks to establish links and correlations of the knowledge variables and the management of the blue key of the nursing professional (Hernández, 2014).

The study population was made up of nurses appointed and contracted from the Southern region of Puno Peru, specifically the San Román Health Network distributed with the Health Centers (CS) as follows: CS Juliaca, CS Samán, CS Cabanillas, CS Cono sur, CS Taraco and CS Santa Adriana; being a total of 200. Now, for the sample, 160 nurses were considered, following a non-probabilistic sampling at the convenience of the author.

On the other hand, data collection was obtained through a structured questionnaire; The instrument was a questionnaire containing a total of 31 items, validated byCardenas & Rivas (2019)with three-level measurement scale. A structured interview guide that consists of two parts, the first part of 01 to 05 items to obtain general data from nurses who work in the emergency service such as: university where they graduated, age, sex, length of time working in the emergency service. service work condition and general data of the patient: sex, age, length of stay and diagnosis. And the second part, the items that correspond to the questionnaire to measure the variable. Likewise, the questionnaire was validated using the Cronbach's Alpha statistic = 0.897.

To measure the blue key management variable, the data collection technique was a checklist containing 50 items, the measurement scale consists of 3 levels on an ordinal scale. Knowledge of hypertensive crisis developed by García Arias and Boscá Crespo (University of Málaga 2008) to evaluate the level of knowledge consists of 26 questions, grouped into the following dimensions: hypertensive emergency in adults, children and gestational. Regarding validity, a value of 0.976 was obtained with Cronbach's Alpha.

Regarding the data collection process, a request for project execution was submitted to the management of the San Román Health Network center, subsequently direct coordination was carried out with the heads of the Office of Organization and Institutional

Development and Training with the purpose of giving Knowing the objectives of this research, with the consent of the Management and the informed consent of each participant, the instruments were applied.

Likewise, SPSS version 27 statistical software was used for data processing, then it was shown that the data are parametric, therefore, the Pearson statistical test was used with a confidence level of 5%, considering that the variables of study are quantitative.

RESULTS

Based on the data obtained through the survey, it is expressed in the tables shown below:

Table 1

Demographic analysis of the population

Variable	Category	F	%
Gender	Male	37	23.1%
	Female	123	76.9%
	Total	*160*	*100%*
Age	From 26 to 35 years	fifty	31.3%
	From 36 to 44 years	61	38.1%
	From 45 to 53 years	31	19.4
	From 54 years and older	18	11.3
	Total	160	*100%*
Time working	From 1 to 5 years	66	41.3%
	From 6 to 10 years	46	28.7%
	From 11 to 20 years	41	25.6%
	From 21 years and older	7	4.4%
	Total	160	*100%*
Performance time	From 1 to 5 years	102	63.7%
	From 6 to 10 years	49	30.6%
	From 11 to 20 years	9	5.6%
	Total	160	*100%*
Condition	Named	77	48.1%
	Hired	83	51.9%
	Total	160	*100%*

According to table number 1, it is a majority population of female gender with 76.9%; while 23.1% are male. Regarding age, 38.1% are between 36 and 41 years old. On the other hand, it was verified that 41.3% of participants have been working in the health establishment for between 1 and 5 years. Something similar happens in terms of the years they have been working in the area, since 63.7% are between 1 and 5 years. Finally, 51.9% are contracted and 48.1% are appointed.

Table 2

Descriptive analysis of the variables

Variables	Levels	F	%
Knowledge	Low level	35	21.9%
	Medium level	4	2.5%
	High level	121	75.6%
Blue key handling	Low level	0	0.0%
	Medium level	0	0.0%
	High level	160	100%

According to Table 2, the levels of the variables addressed are specified. Firstly, it is observed that 75.6% of the nursing staff consider knowledge at high levels; However, 100% of nurses considered the management of the blue code in health personnel to be at high levels.

Table 3

Assumptions of normality of the variables

Variables and dimensions	Kolmogorov Smirnov		
	Statistical	Gl	Next.
Knowledge	0.540	152	0.000
Blue key handling	0.467	152	0.000

Table 3 presents the normality test of the data, using the Shapiro Wilk statistic, it is verified that the data do not fit a normal distribution given that (P – value = 0.000 < 0.05). Therefore, to carry out the inferential analysis, the Spearman Rho statistic will be used.

Table 4

Correlation coefficient of the variables

Correlations

		Knowledge	Management blue key
Knowledge	Spearman correlation	1	-.034
	Sig. (bilateral)		.667
	N	160	160
Blue key handling	Spearman correlation	.034	1
	Sig. (bilateral)	.667	
	N	160	160

For its part, Table 3 presents the correlation between the knowledge variable and the use of the blue key, where it is observed through Spearman's Rho statistic = -0.034 and the bilateral significance P – resulting value was = 0.667 > 0.05; Therefore, it was confirmed that there is no relationship in the study variables.

DISCUSSION

After describing and analyzing the results, in the next section, the contrast of the study findings with other previously carried out research is presented. Firstly, it was verified that 75.6% perceive the levels of knowledge at high levels; and 100% have good blue key management; In congruence, Ayed et al., (2021), in their findings, found that 53.3% perceived low levels of knowledge and 35% evidenced high levels. However, Seif & Rashid (2022) in their study maintained that 50% of health workers demonstrate low levels of knowledge. For their part, Caicedo & Pineda (2022) indicated in their study that 94% of health personnel have good knowledge of the blue code, and they also quickly manage to identify what type of emergency each code corresponds to. In fact, inconsistent levels are verified regarding knowledge of the management of the blue code, mostly low levels, Egas & Domingo (2023) maintain some factors, firstly, the lack of training for health personnel may not receive training adequate information on the identification and management of eclampsia and impending eclampsia during their medical education or during their clinical practice. Lack of specific training may result in a lack of knowledge regarding management protocols and prioritization of necessary interventions in these critical situations. However, Martínez (2020) shows a factor such as lack of clinical experience. Even if health personnel have received training on eclampsia, they may not have had enough practical experience in managing real cases. Lack of direct exposure to patients with eclampsia or impending eclampsia may hinder your ability to prioritize necessary actions effectively in emergency situations. According to the findings, the low knowledge on the part of nurses makes sense in the way that it may not be commonly used or taught in nursing training programs (Triviño & Acosta, 2022); while Blanco et al. (2021) indicate that many nurses may not be familiar with this concept due to lack of exposure or training in this regard.

Likewise, it was verified that there is no relationship between knowledge and blue key management, given that (Spearman's Rho = -0.034 and

P – value = 0.667 > 0.05). Something similar occurs with the study by Quezada & Navarro (2019), since in their findings they did not find a relationship regarding the two variables, since the (Spearman's Rho = 0.068 and the P – value = 0.252 > 0.05). However, another study, carried out by Zapata & Ramírez (2020), indicated that perinatal mortality due to HELLP syndrome is related directly with gestational age, especially in gestations less than 34 weeks. These findings are based on the opinion of Arocha et al. (2021) where he explains that knowledge is essential in the field of health, however, the lack of humanity in many cases of health personnel may be present, which is why poor management of the blue key may not be associated with the knowledge.

For their part, when studying the management of the blue code and knowledge, Triviño & Acosta (2022) emphasized that the crucial role of nurses in the care of pregnant women with preeclampsia and other hypertensive complications of pregnancy is due to their constant involvement in the initial stages of medical care. Consequently, its rapid response in the activation of any of the three obstetric signals is essential, since its effective performance determines the quality of health care provided to this group of patients. For this reason, it is considered essential that knowledge and good management of the blue key in nursing staff be carried out by a team with adequate training and preparation. During this care, it is crucial to make decisions supported by scientific knowledge and critical reasoning, especially when following a detailed protocol that guides each step of managing obstetric emergencies. This approach is implemented to reduce maternal risk, underscoring the importance of timely care that avoids actions that may trigger serious complications. It is essential to understand that patients can face irreversible consequences and even death due to inadequate intervention by the medical staff in charge.

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