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KNOWLEDGE OF NURSING PROFESSIONALS ABOUT BASIC LIFE SUPPORT

Conhecimento dos profissionais de enfermagem acerca do suporte básico de vida

Conocimiento de los profesionales de enfermería sobre soporte vital básico

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ABSTRACT

Objective: to evaluate the knowledge of nursing professionals about Basic Support. **Method:** cross-sectional, quantitative-qualitative study, carried out in a Mixed Unit of a municipality in the interior of the Brazilian northeast, with 9 nursing professionals. A questionnaire was used as a collection instrument. Data were analyzed and interpreted using simple descriptive statistics. **Results:** professionals have knowledge on the subject, with a medium/high hit rate. The team follows some of the steps of the correct sequence of Cardiopulmonary Resuscitation. Errors concern the amount, depth, and correct location of chest compressions. In addition, it was found that the service does not train professionals. **Conclusion:** it is suggested that health services implement permanent education programs with the nursing team since the construction of knowledge reflects on the improvement of health care, since access to more complex health services in the countryside is scarce.

DESCRIPTORS: Nurse practitioners; Cardiopulmonary resuscitation; Nursing care; Emergencies.

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RESUMO

Objetivo: avaliar o conhecimento dos profissionais de enfermagem acerca do Suporte Básico. **Método:** estudo transversal, quanti-qualitativo, realizado em uma Unidade Mista de um município do interior do nordeste brasileiro, com 9 profissionais de enfermagem. Utilizou-se um questionário como instrumento de coleta. Os dados foram analisados e interpretados através da estatística descritiva simples. **Resultados:** os profissionais apresentam conhecimento sobre a temática, com uma taxa de acertos média/alta. A equipe segue alguns dos passos da sequência correta da Ressuscitação Cardiopulmonar. Os erros dizem respeito a quantidade, profundidade e o local correto das compressões torácicas. Além disso, foi constatado que o serviço não capacita os profissionais. **Conclusão:** sugere-se que os serviços de saúde implementem programas de educação permanente com a equipe de enfermagem visto que a construção de conhecimento reflete na melhoria da assistência à saúde, uma vez que o acesso à serviços de saúde de maior complexidade no interior são escassos.

DESCRITORES: Profissionais de enfermagem; Reanimação cardiopulmonar; Cuidados de enfermagem; Emergências.

RESUMEN

Objetivo: evaluar el conocimiento de los profesionales de enfermería sobre el Soporte Básico. **Método:** estudio transversal, cuantitativo-cualitativo, realizado en una Unidad Mixta de un municipio del interior del nordeste brasileño, con 9 profesionales de enfermería. Se utilizó un cuestionario como instrumento de recolección. Los datos fueron analizados e interpretados utilizando estadísticas descriptivas simples. **Resultados:** los profesionales tienen conocimiento sobre el tema, con un índice de acierto medio/alto. El equipo sigue algunos de los pasos de la secuencia correcta de Reanimación Cardiopulmonar. Los errores se refieren a la cantidad, profundidad y ubicación correcta de las compresiones torácicas. Además, se constató que el servicio no forma profesionales. **Conclusión:** se sugiere que los servicios de salud implementen programas de educación permanente con el equipo de enfermería, ya que la construcción del conocimiento se refleja en la mejora de la atención a la salud, ya que el acceso a los servicios de salud más complejos en el campo es escaso.

DESCRIPTORES: Enfermeras practicantes; Reanimación cardiopulmonar; Atención de enfermera; Urgências médicas.

INTRODUCTION

Over the years, the profile of illness and mortality of the world population has been changing. This change is due to factors related to the decrease in infectious diseases, since the discovery of antibiotics, and the increase in the life expectancy of the population. In addition, changes in lifestyle and in economic and social conditions have led to increased exposure to risk factors for other diseases, such as chronic non-communicable diseases, cardiovascular diseases (CVD), and strokes.[1-2]

In this context, there are several events that lead to Cardiorespiratory Arrest (PCR), which is characterized as the interruption of the heart and lung activity, and may result in brain damage. It is an unforeseen and fearful occurrence at several moments, and is a serious threat to life.[3-4]

Aiming at standardizing and improving PCR care, guidelines were created by the International Liaison Committee on Resuscitation (ILCOR) and the American Heart Association (AHA), a voluntary institution whose policy is to reduce deaths from cardiovascular diseases. These can be divided into Basic Life Support (BLS) and Advanced Life Support (ALS).[5]

The BLS is a set of procedures that aim to maintain the life of a subject and save time until the arrival of specialized help. In several cities, located in the interior, with a small number of inhabitants, there is no mobile pre-hospital care.[6-7]

Thus, the population living in these cities ends up resorting to care in Basic Health Units (BHU) or small local hospitals, or in nearby cities, which leads to delayed assistance and future complications. Added to this reality is the increase in violence in the interior, the growing number of accidents, and the lack of Emergency Care Units, culminating in an even greater need for professionals to know about BLS.[8]

However, the lack of information and the unpreparedness of professionals is, unfortunately, a worrisome factor that affects the failure in the recovery of victims of sudden problems. Therefore, the question is: what is the knowledge of nursing professionals in a small hospital about Basic Life Support (BLS)?

In this sense, this research is justified because it recognizes the importance of quality Cardiopulmonary Resuscitation (RCP) care and the need to discuss the continuing education of health professionals in the care of victims of PCR. It also allows a reflection of professionals about the training in the health area, as to their level of knowledge to provide primary care to the community, since being a small city and having its specificities, the faster the assistance based on knowledge and practice, the more lives saved. Besides contributing to subsidize curricular reforms and changes in public health policies.[8-9]

Moreover, scientific evidence indicates that the early initiation of BLS maneuvers in the pre-hospital environment is a key factor for increasing the chances of recovery of the victim of PCR, with a decrease in sequelae. In Portugal, cardiovascular diseases are also one of the most serious problems for the population and most preventable deaths are associated with coronary disease, occurring in out-of-hospital settings.[10]

The study contributes to the assessment of the knowledge about BLS of nursing professionals in a small hospital, enabling

the diagnosis and possible direction for the development of actions to train the team to overcome the problem of professional unpreparedness, as well as the importance of continuing education, collaborating, above all, to increase the chances of survival and decrease the sequelae of people at risk of life. Thus, the objective was to evaluate the knowledge of nursing professionals about Basic Support.

METHOD

This is a quantitative-qualitative cross-sectional study carried out in a small hospital located in a city in the interior of the state of Rio Grande do Norte.11 The city was chosen because it does not have a large hospital and SAMU, thus, it is an area lacking medical assistance. According to the classification of the Brazilian Institute of Geography and Statistics it is part of the Microregion of Serra de São Miguel, 446 km from the capital, Natal. Its population is 6,492 inhabitants, with 3,709 in the rural area and 2,783 in the urban area.[12]

The setting for the research was the Mixed Health Unit, which offers outpatient, inpatient, SADT (Auxiliary Diagnostic and Therapeutic Service) and emergency services, contracted to SUS, covering the levels of Primary Health Care and medium complexity hospital and outpatient care. The service is provided with spontaneous and referenced demand. The facility operates 24 hours a day, seven days a week.

The population of the study was composed of all the nursing professionals who work at the hospital, with a total of 12 professionals: four nurses, six nursing technicians, and two nursing assistants. The inclusion criteria were: being a nursing professional working in the institution. The exclusion criteria were: being away from work due to vacation, medical certificate or any other reason during the application of the questionnaire. After the defined criteria, the number of study subjects was nine participants. There was a sample loss of three participants, because one was on medical leave and two were on vacation.

For data collection, we used a questionnaire designed by the authors based on the reading and indications of the American Heart Association protocol. [3] This was applied by the researchers in printed format, which the professionals answered at the time of the evaluation. The subjects took about 1 hour to answer. The questionnaire was divided into two parts: the first with general information about the professional and his/her work, and the second referring to the specific knowledge about Basic Life Support (BLS).

The first part of the questionnaire included variables such as gender; occupation (nurse, nursing technician, nursing assistant); age; occupation; time of occupation; type of bond; time of training; worked or not in urgency and emergency; witnessed any situation that considered an emergency; feeling when facing an emergency situation; heard about BLS; receiving training on BLS; preparation in the use of previous knowledge in BLS; situation when receiving training; consideration about the importance of

updating on BLS; interest in participating in training; whether the service has an Automated External Defibrillator (AED).

The second part of the questionnaire evaluated specific questions, such as: time of academic training provides greater ability to face a CRA episode; use of CABD mnemonic to the CRA victim; frequency of compressions; chest recoil during compression; Chin-Lift maneuver; frequency of ventilations. These questions were evaluated in True or False format. In addition, questions with multiple choices about: having sufficient capacity to develop basic life support (BLS) and to assist in advanced life support; factors that interfere in BLS quality; CRA identification; chest compressions performance; maneuvers cessation; AED use; shockable rhythms.

For the application of the study, as an initial approach, an approach was made through a visit, at the time of entry or exit of the hospital and/or contact via telephone or e-mail, provided by them. The Informed Consent Form (ICF) was presented to the respective participants, with explanation and clarification of the reason for the research, objectives, risks, and benefits, and then the scheduling/time/date for the professionals to answer the questionnaire, respecting the time that did not hinder their work activities, thus, agreed according to the schedules available by the participants. The collection was carried out between the months of December 2019 and January 2020.

Data were analyzed and interpreted through simple descriptive statistics, presented as frequency and percentage with the help of Microsoft Office Excel® spreadsheet editor. The data were tabulated in Microsoft Excel 2010 program and presented in the form of tables. To compile the collection, the data were tabulated using the following order: transcription of the data in Office Excel spreadsheet; grouping of responses; ordering of the data by topics, and the formulation of tables for the best presentation of the results, and finally the interpretation of the results obtained where the findings were discussed with the pertinent literature.

Because it involves the participation of subjects, understanding the indispensability of ensuring the rights and the integrality of the dignity of the participants according to the criteria of Resolution No. 466/12 of the National Health Council (CNS), research was submitted and approved by the Ethics and Research Committee (CEP) of the State University of Rio Grande do Norte (UERN), under opinion number 3.637.821, CAAE 19196219.0.0000.5294, on October 11, 2019.

RESULTS

Table 1 shows the distribution of the sociodemographic data of the nursing professionals who participated in the research.

Among the 09 research participants, five (55.6%) were female and four (44.4%) were male. Most of them were four (44.5 %) around 20 years old, followed by three (33.3 %) around 30 years old. Regarding occupation, six (66.7%) were nursing technicians and three (33.3%) were nurses. In relation to the time of occupation, most of the participants answered that they had been employed for up to 5 years, with about four (44.5%). Regar-

ding the type of contract, most of them are civil servants, seven (77.8%). Regarding the time of training, most reported having been trained for up to 5 years, with four (44.5%) of the answers.

Experience and knowledge of the nursing staff

Table 2 presents the data regarding the experience and knowledge of the nursing staff.

It can be noticed that nine (100%) of the respondents reported having already worked and witnessed some situation of urgency and emergency. When asked about their feelings when facing an urgency and emergency situation, most participants reported being calm, seven (77.8%). Regarding whether they had already heard about BLS, most of them, seven (77.8%) reported that they had. Regarding some training on BLS, most of them reported not having taken any training, n=seven (77.8%). Of the n=two (22.2%) who had taken the training, they reported that they felt prepared to use the knowledge in some emergency situation and that this training occurred when they were already employed. When asked about the importance of an update on BLS, n=9 (100%) answered yes, they think it is important and would like to participate in a training course on the subject.

Specific knowledge about SVB

In Table 3 it is possible to identify the number of question assertions made from the instrument.

It can be noticed that the majority n=five (55.5%) of the participants had right answers between 6 and 7 questions. n=one (11.1%) of the interviewees had right answers between 8 and 9 questions and 11, n=one (1%) had right answers between 2 and 3 questions. Of these, the question with more correct answers is related to the frequency of ventilations and with less correct answers is related to the execution of chest compressions.

About the identification of a CRA, n=six (66.7%) of the professionals answered correctly. Regarding the correct order, according to the AHA CABD protocol, n= six (66.7%) of the participants got the sequence right. When questioned about the frequency of chest compressions, we noticed that n= eight (77.8%) of the research participants marked the true option when questioned about this frequency 100-120/min, and 22.2% marked the alternative as false.

A fact that called attention in this study was the percentage of errors in the question about the execution of chest compressions. In this question, n= eight (88.9%) got the question wrong, marking the alternative that talked about compressing the diaphragm 5-6 cm at a frequency of 100 compressions per minute and no more than 120, and only n= one (11.1%) marked the affirmative that discoursed about compressing the sternum 5-6 cm at a frequency of at least 100 compressions per minute and no more than 120.

Faced with the statement that the correct answer would be that "during CPR one should not allow the total return of the thorax after each compression", n= six (66.7%) of the partici-

Table 1 – Sociodemographic distribution. Doutor Severiano, RN, Brazil, 2020

Gender	N	%
Male	4	44,4
Female	5	55,6
Total	9	100,0
Occupation	**N**	**%**
Nurse	3	33,3
Nursing Technicians	6	66,7
Total	9	100,0
Age	**N**	**%**
20 years old	4	44,5
30 years old	2	22,2
40 years old	2	22,2
50 years old	1	11.1
Total	9	100,0
Time of occupation	**N**	**%**
up to 5 years	4	44,5
6 to 10 years	2	22,2
11 to 15 years	1	11,1
16 to 20 years	1	11,1
More then 20 years	1	11,1
Total	9	100,0
Type of bond	**N**	**%**
Civil Servant	7	77,8
Full time employee	0	0
Other	2	22,2
Total	9	100,0
Training time	**N**	**%**
up to 5 years	4	44,5
6 to 10 years	2	22,2
11 to 15 years	1	11,1
16 to 20 years	1	11,1
More than 20 years	1	11,1
Total	9	100,0

Table 2 – Experience and knowledge of the nursing team. Doutor Severiano, RN, Brazil, 2020

Have you ever worked in urgency/emergency?	N	%
Yes	9	100,0
No	0	0
Total	9	100,0
Have you ever witnessed a situation that you considered an emergency?	**N**	**%**
Yes	9	100,0
No	0	0
Total	9	100,0
How do you feel when facing emergency situations?	**N**	**%**
Calm	7	77,8
Nervous	2	22,2
Very nervous	0	0
Total	9	100,0
Have you ever heard of BLS?	**N**	**%**
Yes	7	77,8
No	2	22,2
Total	9	100,0
Have you ever received any kind of training on BLS?	**N**	**%**
Yes	2	22,2
No	7	77,8
Total	9	100,0
If yes, do you feel prepared to use it in an emergency situation?	**N**	**%**
Yes	2	100,0
No	0	0
Total	2	100,0
In what situation did you receive the BLS training?	**N**	**%**
Employee	2	100,0
Student	0	0
Driving school student	0	0
Total	2	100,0
Do you think it is important to be updated on BLS?	**N**	**%**
Yes	9	100.0
No	0	0
Total	9	100,0
Would you like to participate in a training session on the subject of BLS?	**N**	**%**
Yes	9	100,0
No	0	0
Total	9	100,0

Table 3 – Specific knowledge about BLS. Doutor Severiano, RN, Brazil, 2020

Subject of the questions	Acertos	%	Erros	%
Identifying a PCR	6	66,7	3	33,3
Order in the delivery of assistance in RPC	6	66,7	3	33,3
Frequency of Compressions	7	77,8	2	22,2
Performing Chest Compressions	1	11,1	8	88,9
Full thorax return	6	66,7	3	33,3
Chin-Lift Maneuver	8	88,9	1	11,1
Frequency of ventilations	9	100	0	0
Cease maneuvering	5	55,6	4	44,4
Use of automatic defibrillator	5	55,6	4	44,4
Shockable rhythms in RCP	7	77,8	2	22,2

pants marked the alternative as false, thus demonstrating their knowledge about the question. Another noteworthy finding is regarding the Chin-Lift maneuver. This question had n= eight (88.9%) right answers, showing that the subjects understood that the maneuver is used to open the airways, which consists in placing the fingers of one of the examiner's hands under the chin, which is slightly pulled upward and forward, while the thumb of the same hand depresses the lower lip to open the mouth; and the other hand of the examiner is placed on the frontal region to hold the victim's head.

Furthermore, it is noteworthy that in this study, when asked about the frequency of ventilation, all participants answered correctly the question n= nine (100%), this question consisted in the presentation of the frequency of 30:2 ventilations (30 compressions and 2 ventilations). When questioned about the moment to stop the maneuvers, n= five (55.6%) participants of the study marked the alternative that said to stop the maneuvers

when the victim presents pulse again, n= three (33.3%) marked the alternative that said to stop after 2 min from its beginning for a new evaluation and n= one (11.1%) that to stop when help arrives.

In the question about the use of the automatic external defibrillator - AED, n=five (55.6%) marked the alternative that talked about using the device if there was one available on site. Other n=four (44.4%) selected the option to perform chest compressions for 10 minutes and only then use the AED. And finally, regarding shockable cardiac rhythms, n=seven (77.8%) marked the alternative which contained the rhythms Ventricular Tachycardia and Ventricular Fibrillation, thus marking the correct alternative.

DISCUSSION

The nursing profile survey in Brazil shows that 86.2% of nurses are women. However, the presence of more than 55 thousand men is registered, which means 13.4%. It can be affirmed that this segment is undergoing a process of masculinization, with an increasing participation of men in the category.[13]

According to a study divulged by COFEN, the Nursing team is considered young, with about 63.9% of the professionals up to 40 years old.[14] This shows a proximity with this research, as most nursing professionals are younger than the age range evidenced at a national level. In the national panorama, nurses make up 23% of the nursing team, while technicians and assistants correspond to 77% of the team.[15] It is noteworthy that in this study, the percentage of nurses is above the national average, which follows a trend in the increase over the last 30 years.

It was noticed that the professionals reported having knowledge about the theme. BLS is considered the basis for care in cases of PCR and defines the primary sequence of resuscitation to save lives, including immediate recognition of the injury, activation of the emergency response system, early RCP, and rapid defibrillation. In addition, successful recovery of the victim of PCR is the presence of someone trained to start the RCP maneuvers as soon as its occurrence is verified.[16-17]

Despite their knowledge, they still think it is important and would like to participate in a training course on the subject. In order to update the knowledge of health professionals and provide better care to the user, some services use educational methods to train their staff through training, emergency or specific courses, and capacity building.[18]

It is of great importance to implement continuing education to update the health teams, since being in working spaces contributes to greater safety in care and improves the knowledge of professionals, favoring professional satisfaction and quality care.[19]

Regarding the specific aspects, the data from this study are similar to those found in the literature about the detection of cardiac arrest, since 66.67% of the nurses answered partially correctly about the identification of cardiac arrest.[20] Considering that it is the first step to initiate cardiopulmonary resuscitation maneuvers in BLS, it is necessary to provide fast, accurate, and systematized care to this user. For this to happen, the survival

chain developed under the American Heart Association Guidelines is used.[3]

The recognition of a PCR consists in the identification of the absence of a carotid pulse or the presence of gasping, according to the recommendation of the Brazilian Society of Cardiology (BSC). The order of RCP assistance is an important aspect. A successful RCP depends on a sequence of procedures that can be systematized in the concept of the chain of survival, besides important determinants such as the theoretical knowledge and practical skills of healthcare professionals, because PCR requires fast, effective and integrated actions.[20-21]

When facing a situation that could be considered a PCR, it is essential to be guided by a sequence of actions, which must be performed according to the AHA CABD protocol, which consists in opening the airway; ventilation; compressions and Defibrillation-AED.[3] It is worth mentioning the knowledge that was presented by the subjects in this sequence, which results in a perspective of application of these actions if they come to witness a PCR.

The data obtained in this study are close to a study developed at the Hospital de Urgência Trindade (HUTRIN), where 72.22% of the research participants identified the correct sequence of the CABD algorithm.[22]

According to AHA recommendations,[3] the frequency for chest compressions should be 30 compressions, followed by two ventilations at a minimum rate of 100 to 120 compressions/minute, for RCP to be considered good quality, ensuring the maintenance of the body's circulation and oxygenation, responsible for conducting oxygen to vital organs.

The findings about this question in the research are presented as positive, because it demonstrates that the subjects recognize the quantity of compressions. These numbers found are above the data of a research, in Recôncavo Baiano with ESF nurses, in their study found that 57.1% of the nurses could identify the frequency of chest compressions.[23]

A worrisome data is in the findings regarding the execution of chest compressions and total return of the thorax, in which a high percentage of mistakes was noted by the research subjects. This lack of knowledge implies directly in an incorrect assistance, which may compromise the health of the user who needs care.

The AHA states that during a RCP the individual should avoid leaning on the thorax between compressions to allow the total return of the thorax wall in adults with PCR. Since chest wall recoil creates a relative negative intrathoracic pressure. It is this pressure that promotes venous return and cardiopulmonary blood flow. When the chest is not allowed to return, it influences poor RCP and a greater chance of failure.[21]

In the perspective of the maneuvers, the Chin-Lift maneuver was the one the participants knew the most, thus, knowledge of such an important maneuver deduces that performing it can be crucial for avoiding loss of life.

It is worthwhile to reflect on a very relevant finding, since the research subjects, in their totality, showed they knew the frequency of ventilations in a PCR. The frequency of ventilations

should be 30 compressions for two ventilations (30:2), offering a sufficient amount of air to elevate the thorax, lasting about one second. Each ventilation with the AMBU should be performed for 1 second, with a pause of 3 to 4 seconds between each ventilation. The examiner needs to make sure that the airway is adequately opened. To do this, it is necessary to tilt the head and lift the jaw against the mask, holding it against the face of the victim ensuring a good seal.[21]

It is also necessary to know the ideal moment to interrupt the maneuvers. Therefore, it is emphasized that these must be uninterrupted, and may be stopped when there is a return of spontaneous blood circulation, the person has some movement, or declared death.[21]

Defibrillation is defined as the use of a direct current electric shock, with large amplitude and short duration, applied to the thorax. During irregular cardiac electrical activity, defibrillation depolarizes all the heart cells, allowing the normal cardiac cycle to restart in an organized manner throughout the myocardium. The AED is a life support equipment capable of reverting pulseless Ventricular Fibrillation (VF) and Ventricular Tachycardia (VT) to spontaneous circulation, and that does not require electrocardiographic tracing interpretation, being, therefore, easy to use and recommended to laymen and health professionals, as long as they are properly trained.[24-25]

Often pulseless VF and VT are the rhythms found in people with witnessed PCR. It is therefore extremely important that both RCP maneuvers and defibrillation are performed early. The chance of survival is reduced by 7.0 to 10.0% for every minute of delayed defibrillation and pulseless VF/VT eventually deteriorates to asystole over time, but performing RCP maneuvers can prolong pulseless VF/VT by increasing the chances of successful defibrillation.[26]

Furthermore, because they are effective methods that are simple to understand, they require basic knowledge of first aid to be performed. It is understood that knowledge about BLS should be universal, that is, that not only health professionals but also the entire population should know and have access to these procedures, since the chances of recovery of victims increase in relation to the agility with which urgencies/emergencies are recognized and adequately treated.[27]

The limitations of the study are: the method of data analysis and interpretation (simple statistics); quantitative number of subjects, which makes generalizations difficult; different professional levels (technicians and nurses, since the level of knowledge is different, and this influences the result); recall bias (the person may know the answer and at the time did not remember, or had time to study); the instrument is not validated.

It is suggested that only nurses be surveyed to give a real notion of the knowledge of these professionals, since they are responsible for the team and for conducting training courses; validation of the collection instrument; and a larger research universe with studies that enable a higher level of evidence.

It brings contributions to the extent that it assesses the knowledge of professionals on BLS, enabling the diagnosis and possible direction for the development of actions for the training of the team to overcome the problem of professional unpreparedness, as well as the importance of continuing education, collaborating, above all, to increase the chances of survival and reduction of sequelae of people at risk of life in contexts with shortage of medical and health services.

CONCLUSION

The objective of the study was achieved when evaluating the knowledge of nursing professionals about BLS in a small hospital. The professionals present knowledge about the theme, with a medium/high hit rate. The team follows some of the steps of the correct sequence of CPR, with a majority of correct answers, but wrong in some points, such as the quantity, depth and correct place of chest compressions. Moreover, it was found that the service does not train professionals, however, they showed interest in participating in some training, besides recognizing its importance.

Thus, it is suggested that health services can implement programs, training and coaching with the team on BLS, as well as conducting health education with the purpose of building knowledge for professionals, which reflect in the improvement of professional qualification and health care, since the knowledge of these professionals is of fundamental importance in a context of the interior, hinterland, and without access to health services of greater complexity.

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