



ORIGINALES

A Training Communication Program Designed for Emergency Nurses Working at Ambulance

Programa de formación basado en técnicas de comunicación básica y asistida para las enfermeras de extrahospitalaria

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<https://doi.org/10.6018/eglobal.507341>

Received: 26/01/2022

Accepted: 5/04/2022

ABSTRACT:

Communication is the key to understanding the emotional vulnerability of patients in critical condition. A sudden change in health experienced by these individuals due to an accident or illness can lead to serious psycho-emotional outcomes.

Main objective: To conduct and evaluate an augmentative alternative communication training program (CONCETEM) for pre-hospital nurses and determine its utility and the satisfaction of the nurses.

Methods: The study has an observational-descriptive design. The sample was 12 pre-hospital nurses selected by inclusion criteria. Post-training evaluation was conducted by the research team to learn whether nurses could perform the communicative intervention.

Results: 100% of the nurses who underwent CONECTEM training were prepared to implement communicative intervention in the ambulance. 60% of the nurses considered that the training was very useful for improving the quality of care for critically ill patients transferred by ambulance. The nurses' satisfaction with the communication training was 'very good' for 42.4% and 'good' for 58.3%.
Conclusions: The results support the importance of Augmentative Alternative Communication training to improve outcomes in critically ill patients and reveal that nurses feel that more training is needed.

Key words: Communication barriers, critical care, ambulance, nurse-patient relationship.

RESUMEN:

La comunicación es la clave para comprender la vulnerabilidad emocional de los pacientes en estado crítico. Un cambio repentino en la salud, experimentado por estas personas debido a un accidente o enfermedad, puede causar un efecto psicoemocional como la ansiedad o el estrés postraumático.

Objetivo principal: Evaluar un programa de formación en técnicas de comunicación básica y asistida (CONECTEM) para enfermeras pre-hospitalarias y conocer la utilidad y la satisfacción percibida del programa de formación.

Métodos: El estudio presenta un diseño observacional-descriptivo cuasi experimental. La muestra fue de 12 enfermeras pre-hospitalarias seleccionadas según los criterios de inclusión. Se realizó un test post formación para evaluar los conocimientos adquiridos de las enfermeras.

Resultados: El 100% de las enfermeras que realizaron el entrenamiento en CONECTEM fueron aptas para implementar la intervención comunicativa en la ambulancia. El 60% de las enfermeras consideró que la formación fue muy útil para mejorar la calidad de la atención en los pacientes críticos trasladados en ambulancia. La satisfacción percibida por las enfermeras de la formación CONECTEM, fue muy buena en un 42,4% y buenas, en un 58,3%.

Conclusiones: Los resultados respaldan la importancia de la formación en técnicas de comunicación asistida y alternativa (CAA) para mejorar las curas integrales al paciente crítico y ponen de manifiesto la necesidad de formación en comunicación de las enfermeras de pre-hospitalaria.

Palabras clave: Barreras de comunicación, cuidados críticos, ambulancias, relación enfermera-paciente.

INTRODUCTION

Communication with the critically ill patient is complicated by the environmental, social, physical, and structural barriers that encompass it^(1,2). The inability to speak as a consequence of mechanical ventilation, exhaustion, weakness, fear, or anxiety all contribute to need to interpret the movement, gestures, and behavior of the patient^(3,4). Poor communication between the nurse and the critically ill patient generate negative emotions, loss of control, misunderstanding, dependency, and alteration of the perception of the patient, with a direct effect on his or her health^(5,6).

The training of nurses in communication techniques has always been at a handicap in the improvement of communication with the patient, and by extension his or her well-being. The first studies made of communication between the nurse and the critically ill patient indicated that nurses relied on verbal communication, with short instructions (less than a minute) concerning the technical procedures to be carried out⁽⁷⁾. Some nurses have used other techniques such as lip-reading and learning by trial and error. Misunderstandings and poor interpretation generated insecurity and frustration in the nurses and worsened their ability to manage pain⁽⁸⁾, provide emotional support, and meet the needs of the patient⁽⁹⁾.

The first quasi-experimental study giving evidence of the effectiveness of communication between the nurse and the patient was carried out by Happ et al.⁽¹⁰⁾, with an intervention called SPEACS. This study measured the frequency, quality, ease, and success rate of communication during nurse-critically ill patient interaction.

The first training of nurses in this area was carried out by specialists in Augmentative Alternative Communication (AAC). The results of the study opened up a new line of research examining the analysis, application, acceptance, and effectiveness of AAC. Models of AAC were then constructed^(10,11), with nurses receiving training in the different levels of technology associated with AAC: no technology (basic communication skills (BCS)), low technology (blackboards, drawings, international gestures)⁽¹²⁾, and high technology (electronic devices and programs)^(13,14). Also assessed were the implementation and impact of AAC training, and the impediments to its implementation in the intensive care unit (ICU)^(1,15).

In our review of the literature we turned up no studies that contemplated the training of pre-hospital nurses in medicalized ambulances with AAC. The training of pre-hospital nurses (Emergency Medical Systems--SEM) in AAC was therefore put forward for the present study. The adverse conditions represented by the ambulance constitute an additional difficulty in the task of communicating with the critically ill patient^(16,17), creating a challenge for the healthcare personnel trying to transmit safety and comfort while accompanying the patient and determining the needs and worries of the individual during transport⁽¹⁸⁾.

MAIN OBJECTIVES

To assess a training program in basic communication skills (BCS) and augmentative alternative communication (AAC), CONECTEM for pre-hospital nurses and to learn both the usefulness of the training program and the level of satisfaction of those participating in it.

METHODS

Design

This is a prospective, observational, descriptive study. Training was carried out in BCS and AAC (CONECTEM) with selected nurses, with the goal of fulfilling the aims put forth. A post-test model was used.

Population and sample

The population for the study was all of the active nurses in the Medical Emergency System (SEM) database in Puigcerdà (n 22), in the north of the autonomous region of Catalonia, Spain. The non-probabilistic sample was chosen by the principal researcher according to inclusion and exclusion criteria. 1) Inclusion criteria: Being an active nurse on the Puigcerdà SEM team and working more than four duty-shifts per month. 2) Exclusion criteria: Less than two years' pre-hospital experience and having undergone prior training in AAC. The final sample consisted of 12 nurses (n 12).

CONECTEM program and its development

The CONECTEM training program, is aimed principally at nurses treating critically ill patients. It provides tools and resources to nurses to communicate effectively with the aim of improving the quality of the nursing care provided to critically ill patients, limiting

the possible psycho-emotional consequences arising from their situation. The program is organized into 4 blocks, as may be seen in Table 1.

Table 1 CONECTEM TRAINING PROGRAM

BLOCK 1	Anthropology and theoretical basis of communication applied to nursing Basic concepts
Basic Concepts	<ul style="list-style-type: none"> ❖ Anthropological vision of communication ❖ Communicative paradigms <ul style="list-style-type: none"> • Verbal communication (language, paralinguistics, intentionality) • Nonverbal communication (corporeality, tact, pimping, look, smile) ❖ Effective communication (theories and models) <ul style="list-style-type: none"> • "Theory Helping Human Relationships" (Carkhuff 1968)¹ <ul style="list-style-type: none"> ❖ Start dimension / dimension Response ❖ Reflective process with the patient ❖ Social and communicative skills • "Augmentative Assistive Communication" (Beukelman, Garret, & Yorkston, 2007)² <ul style="list-style-type: none"> – Model for patients with communicative difficulties – Communicative dimensions (social circle, needs and desires, routine and information) – Technology levels
Objectives	<ul style="list-style-type: none"> <input type="checkbox"/> Recognize the importance of communication at the human level <input type="checkbox"/> Knowing how to distinguish the two communicative paradigms and relate them to each other <input type="checkbox"/> Integrate the reflective communicative process into nursing practice <input type="checkbox"/> Know the scope of different assisted communication strategies
Practical exercises	<ul style="list-style-type: none"> <input type="checkbox"/> Integrate verbal/nonverbal communication <ul style="list-style-type: none"> <input type="checkbox"/> The blind hen <input type="checkbox"/> Wax figure <input type="checkbox"/> Encrypted message
BLOCK 2	The critically ill and the psycho-emotional effects
Basic Concepts	<ul style="list-style-type: none"> ❖ Description and characteristics of the critically ill patient (loneliness, vulnerability, fragility, lack of communication) ❖ The psycho-emotional effects <ul style="list-style-type: none"> • Pain • Anxiety • Posttraumatic Stress Disorder (PSD)
objectives	<ul style="list-style-type: none"> ❖ Understand the context of the critical illness and what it entails for the person ❖ To know the importance of psycho-emotional effects for the recovery and prognosis of the critical patient ❖ Distinguish the most prominent psycho-emotional effects in the critical patient ❖ To know the characteristics of the explained psycho-emotional effects (pain, anxiety and PSD)
Practical exercises	<ul style="list-style-type: none"> ❖ Emotional workshop to work pain, anxiety and PSD

BLOCK 3	CONECTEM Communicative Intervention
Basic Concepts	<p>Explanation of how to perform the intervention in the ambulance Intervention: Three communicative strategies according to the patient's Glasgow</p> <ul style="list-style-type: none"> ❖ Strategy 1 (Glasgow 15) <ul style="list-style-type: none"> • Eye contact • Confirm messages • Take breaks • Specific and clear questions • Empathic attitude, respectful and assertive ❖ Strategy 2 (Glasgow 14-9) <ul style="list-style-type: none"> • Concrete and precise language • Short phrases • Set a signal for yes / no, I don't understand • Augmentative alternative communication with boards and pictograms (emotions, needs) • Augmentative alternative communication with gestures (International dictionary) ❖ Strategy 3 (Glasgow <9) <ul style="list-style-type: none"> • Observation of facial and motor movements • Observation of changes in vital signs • Quiet environment (avoid excess light and noise) • Touch contact making • Music <p>Scales and Instruments:</p> <ul style="list-style-type: none"> ❖ Pain (VAS, BPS) ❖ Ansiedad (STAI, Ramsay Scale) ❖ PSD (IES, Richmon Scale)
Objectives	<ul style="list-style-type: none"> ❖ Understand the concepts explained in the CONECTEM communication intervention and put them into practice ❖ Strengthen the actions to carry out each communicative strategy ❖ Apply each communicative strategy according to the needs of each patient.
Practical exercises	<ul style="list-style-type: none"> ❖ Case management ❖ Rol-playing ❖ Music therapy workshop
BLOCK 4	Sessions of the CONECTEM program
Training planning	<ul style="list-style-type: none"> ❖ Distribution and schedule of sessions (2 sessions / 2 hours) ❖ Material used ❖ Session timing
CONECTEM PROGRAM METHODOLOGY	
Power point, case studies, small group work, role-playing, video support	
CONECTEM PROGRAM EVALUATION	
Theoretical-practical exam of 3 cases with 4 questions to answer Suitable-pass: Answer correctly 70% of each case	

AVS: Analog Visual Scale, BPS: Behavior Pain Scale, STAI: State-Trait Anxiety Scale, IES: Impact Event Scale

1. Beukelman, D, K Garret, y K Yorkston. *Augmentative Communication Strategies for Adults with Acute or Chronic Medical Conditions*. Baltimore: Paul H Brookes Publishing Co,2007.

2. Carkhuff, R. *Helping Human Relations* (Vol. 1). New York: Holt, Rineheart and Winston, Inc, 1969.

Instruments

Theoretical-practical test to assess the level of knowledge acquired

The examination consisted of 3 cases with 4 questions each. Two of the questions were closed, and 2 open. In each case answering 3 or all 4 questions correctly indicated that the nurse was prepared.

Questionnaire to determine the usefulness of CONECTEM

A questionnaire was drawn up to measure the following items: the importance of communication prior to the training, new perspectives on communication, broadening of knowledge, incorporation of new techniques, change of attitude towards the patient, improvement in communicative skills, comprehension of psycho-emotional effects, and improvement in care provided. Each variable was assessed with a Likert scale from 1 to 5, with 1 representing 'none' and 5 'a lot'.

Questionnaire on satisfaction with the CONECTEM program

A questionnaire was prepared to measure the following items: materials used, information provided, organization and structure, clarity of explanations and importance of content, participation of the students, relation of theory to practice, satisfactory response to student questions, appropriateness of assessment, and general assessment of the course. Each variable was assessed with a Likert scale from 1 to 5, with 1 representing 'very deficient' and 5 'very good'.

Data collection

In order to carry out the training, three different days were offered to the nurses, to insure that they would be able to attend. The program was made up of 2 sessions of two hours' duration, held in the training room at the Hospital de Cerdanya. At the conclusion of the second session assessment of the training was made by means of the theoretical-practical test. Sociodemographic data and information about the work situation of the nurses was also gathered. Their level of satisfaction with the program was measured with the questionnaire designed to that end, administered by the research team. The usefulness of the training was assessed with an additional questionnaire that was administered at three months' following the program.

Statistical analysis

For the qualitative variables, absolute and relative frequencies in the form of percentages were used, while for the quantitative variables the mean and the standard deviation were used when there was a normal distribution, and the median and the interquartile range when there was not. Data collection was made with a digitized database and analysis was made by means of the statistical package for Windows SPSS v18 (LEAD Technologies, Chicago, Illinois).

Ethical considerations

The project was approved by the Independent Ethics Committee of the Regional University (Spain) INF-2014-17 and by the Board of Directors of the Emergency

Medical System (Spain) 20150120_21. The Declaration of Helsinki on ethical principles for medical research involving human subjects guided the study⁽¹⁹⁾. Informed consent of the nurses was formalized in order to insure their voluntary participation, the confidentiality of the data collected, and the anonymity of the data. The authors declare there to be no conflicts of interest.

RESULTS

Sociodemographic characteristics of the nurses

The average age of the participating nurses was 37.5 years. Some 58.3% of the nurses undergoing the communication training were female (n 7). 66.7% were working the day shift. In terms of their work history, 66.7% (n 8) of the nurses had from 5 to 10 years of experience. 75% of them (n 9) had completed a course on basic communication skills during their nursing studies, while 16.7% (n 2) had no prior training in communication (see Table 2).

Table 2. Nurses' socio-demographic characteristics (n 12)

	<i>MX</i>	<i>SD</i>	<i>Typ Er</i>
Age in years	37,5	3,605	1,041
	n	%	
Age at intervals			
< 35	2	16,7	
35 a 40	6	50	
> 40	4	33,3	
Total	12	100	
Sex			
female	7	58,3	
Male	5	41,7	
Turn			
day	8	66,7	
night	4	33,3	
Work experience in pre-hospital care			
< 5 anys	2	16,7	
5 i 10	8	66,7	
> 10	2	16,7	
Training in BCS			
None	2	16,7	
During nursing studies	9	75	
Some course	1	8,3	

MX: Average; SD: Standard Desviation; Typ Er: Typical error; BCS :Basic Communication Skills

Aptitude of the pre-hospital nurses in BCS and AAC in the CONECTEM training

All of the nurses participating in the study were prepared to develop their BCS and AAC training in the workplace setting. Most of them responded correctly to the closed questions about the cases: all of them for cases 1 and 3, and 83.3% for case 2. The largest percentage of incorrect responses was in the open reasoning questions: 33.3% for case 1 and 41.7% for case 2. Nevertheless, the prehospital nurses (n 12) who underwent CONECTEM training in BCS and AAC passed the theoretical-practical examination satisfactorily.

Usefulness of CONECTEM training

Prior to the training, only 30% of the participating nurses saw communication with the critically ill patient as being important. In contrast, three months after completing the training, 100% of the same nurses felt that the training had opened up new perspectives regarding communication between the nurse and the critically ill patient. Half of the nurses 50% said that the training had helped them greatly in understanding more fully the psycho-emotional effects felt by the critically ill patient, while another 40% felt that it had helped them somewhat. In terms of expanding knowledge about the techniques of communication, 60% said that the training had done so a great deal, while another 40% said that it had done so somewhat. We find the same percentages with respect to the training and improvement in care quality. Some 60% felt that the training had improved the care they provided the critically ill patient greatly, and 40% said that it had done so somewhat. Therefore, we may conclude that the prehospital nurses saw the CONECTEM training program as ranging between somewhat useful and very much so. See Table 3.

Table 3. Assessment of the utility and application of the CONECTEM training

	Little	Sometimes	Pretty	Much	MX	SD	Typ Er
	n(%)	n(%)	n(%)	n(%)			
Importance of pre-training communication	3(30)	4(40)	3(30)	0	3	,774	,258
New communication perspectives	0	0	8(80)	2(20)	4,2	,434	,133
Knowledge Extension	0	0	4(40)	6(60)	4,6	,489	,163
Incorporation of new techniques	1(10)	3(30)	6(60)	0	3,5	,670	,224
Change of attitude towards the patient	0	2(20)	7(70)	1(10)	3,9	,538	,133
Communication skills improvement	0	4(40)	5(50)	1(10)	3,7	,640	,213
Understanding of psycho-emotional effects	0	1(10)	4(40)	5(50)	4,3	,640	,221
Improvement of the quality of care	0	0	3(30)	7(70)	4,8	,458	,153

MX: average; SD: Standard deviation ;Typ Er: Typical error; Rating: 1 (nothing), 2 (Little), 3 (Sometimes), 4 (Pretty), 5 (Much)

Perceived satisfaction with the CONECTEM program

The general assessment of the training was 58.3% good and 42.4% very good. The items seen most favorably were: encouraging student participation, the response of the teacher to questions that arose during the training, and the structure and organization of the course. Of note, all the other variables averaged better than 4/5. Therefore, we may conclude that the satisfaction of the nurses with their program was good. See Table 4.

Table 4. Nurses' satisfaction perception of communication training (n12)

	Fair	Good	Very good	MX	SD	Typ Er
	n(%)	n(%)	n(%)			
Material used	1 (8,3)	7(58,3)	4(33,3)	4,17	,577	,193
Adequate information	0	6(50)	6(50)	4,50	,522	,150
Program organization	0	4(33,3)	8(66,6)	4,67	,492	,142
Importance of knowledge	0	2(16,6)	10(83,3)	4,42	,669	,112
Student participation	1(8,3)	5(41,6)	6(50)	4,83	,389	,083
Relationship between theory and practice	1(8,3)	6(50)	5(41,6)	4,33	,651	,193
Answer to questions	0	1(8,3)	11(91,6)	4,92	,289	,179
Suitability of the evaluation	1(8,3)	7(58,3)	4 (33,3)	4,25	,622	,179
General evaluation of the program	0	7(58,3)	5(42,6)	4,42	,515	,148

MX: average; DS: Standard desviation; Tip Er Typical error; Rating: 1 (Very poor), 2 (Bad), 3 (Fair), 4 (Good), 5 (Very good)

DISCUSSION

At the outset the nurses participating in the study had a relatively low perception of the importance of communication with the critically ill patient; some 70% (n 7) thought it of little importance or somewhat important. The researchers did not dig deeper to uncover the sources or consequences of this lack of interest, but the reviewed literature indicate that the lack of effective communication between nurse and critically ill patient gives rise to frustration and insecurity in healthcare professionals⁽²⁰⁻²²⁾.

Regarding satisfaction with the CONECTEM program, the results indicate that the nurses viewed the methodology used in the program positively, as it encouraged participation by the students. Role-playing and practical case study are two of the most commonly used methods in training programs in communication techniques^(23,24). The clarification of the concepts and the general evaluation of the program were also very satisfactory (average 4.42/5). It is of note that the training in communication techniques was well received on the part of the nurses. Koszaliniski et al.⁽²⁵⁾ reported that 41.6% of the nurses in a training program were then able to communicate better with patients, and 100% were inclined to repeat the training experience. Different

studies reported that the nurses felt that the training in BCS and AAC was beneficial to them both professionally and personally^(17,25-27).

The results of the present study reveal that the nurses felt that the CONECTEM program was useful (40%) or very useful (60%), in that their improved communication skills meant an improvement in the quality of care provided to critically ill patients. Similar studies in which the nurses participated in in BCT and AAC training also reported that the nurses saw their training as an professional improvement. Koszalinsky et al.⁽²⁸⁾ reported that nurses found new techniques learned in their training to be useful, and often used by them. Higginson et al.⁽²⁹⁾ concluded in their study that 89% of the nurses participating in the PACE intervention found it to be very useful. Nurses feel greater professional self-confidence when they are able to communicate with their patients. Mehmet et al.⁽²³⁾ carried out training with emergency service nurses. After the training, their communicative skills (p 0.001), empathy (p 0.001), respect and understanding (p 0.01), and active listening (p 0.03) *vis a vis* the patient had increased, while their ineffective interactions with patients had decreased by 66%.

In our study the nurses participating in the CONECTEM training believed that the training had opened up new perspectives for them in terms of communicating with critically ill patients, had improved their communicative skills, and had helped them to comprehend the psycho-emotional effects on the critically ill patient (average 4/5). In contrast, the items related with the implementation of the communication techniques had lower scores (average 3/5). Authors who have studied the difficulty in implementing BCS and AAC with the critically ill patient have described barriers encountered by the nurses, including a shortage of time, unfamiliarity with the technology^(1,15), lack of training, and failure of communication despite having used the techniques that were learned, leading to a certain insecurity in using AAC⁽²⁸⁾.

Limitations

The study has two limitations that must be noted: 1) we did not examine the barriers in the implementation of the training, and their causes. A further study should be carried out to this end; and 2) the representativeness of the sample is limited (n 12), although the other studies reviewed that reported training programs for nurses had from 10 to 22 participants^(24,29,30).

CONCLUSIONS

The SEM nurses who underwent CONECTEM training based on BCT and AAC were then prepared to apply the new communicative model to their professional lives. All of the nurses felt that the training was useful and that it had improved the care provided to critically ill patients transported in ambulance. The nurses were satisfied with the CONECTEM training, thereby aiding in its future implementation.

Prehospital nurses consider training in BCS and AAC to be useful in helping them communicate more effectively with patients.

Communication programs need to be put in place to improve the quality of care provided to critically ill patients transported in ambulance.

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