



User embracement with risk classification in an emergency care unit: an evaluative study*

Acolhimento com classificação de risco em unidade de pronto atendimento: estudo avaliativo
Acogimiento con clasificación de riesgo en unidad de pronta atención: estudio evaluativo

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ABSTRACT

Objective: Describing the evaluation of the Structure, Process and Outcome of User Embracement with Risk Classification of an Emergency Care Unit from the perspective of physicians and nurses. **Method:** An evaluative, descriptive, quantitative study developed in Santa Catarina. Data were collected using a validated and adapted instrument consisting of 21 items distributed in the dimensions of Structure (facilities), Process (activities and relationships in providing care) and Outcome (care effects). In the analysis, descriptive statistics and the Mean Ranking and Mean Score calculations were applied. **Results:** The sample consisted of 37 participants. From the 21 evaluated items, 11 (52.4%) had a Mean Ranking between 3 and 4, and none of them reached the maximum ranking (5 points). “Prioritization of severe cases” and “Primary care according to the severity of the case” reached a higher Mean Ranking (4.5), while “Flowchart discussion” had the lowest Ranking (2.1). The dimensions of Structure, Process and Outcome reached mean scores of 23.9, 21.9 and 25.5, respectively, indicating a Precarious evaluation (17.5 to 26.1 points). **Conclusion:** User Embracement with Risk Classification is precarious, especially regarding the Process which obtained a lower satisfaction level from the participants.

DESCRIPTORS

Emergency Nursing; User Embracement; Health Services Evaluation; Emergency Medical Services.

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INTRODUCTION

In Brazil, the User embracement with Risk Classification (*ACCR – Acolhimento com Classificação de Risco*) proposed by the Ministry of Health through the National Humanization Policy, represents one of the interventions with decisive potential to reorganize emergency care services and implement health network production⁽¹⁾. Thus, in the Emergency Care Network instituted in 2011, the ACCR corresponds to the process basis and the care flows, a requirement for all care service points⁽²⁾.

The ACCR is understood as a relational technological tool for intervention guided by qualified listening, building of a bond, guaranteed access with responsibility, health service resoluteness, as well as care prioritization for more severe patients⁽¹⁾. It therefore represents a way of restructuring the triage process which generally ends after user/patient reception, which makes such a process an inclusion action that permeates all care spaces and moments in health services⁽³⁾, with an example being in the Emergency Care Units (*UPA – Unidades de Pronto Atendimento*). According to this proposal, all health professionals should perform user embracement of the patient and their family members; however, the nurse is responsible for the patient's risk classification⁽¹⁾.

In order to ensure that this responsibility is performed exclusively by the nurses among all nursing professionals, the Federal Nursing Council (*COFEN – Conselho Federal de Enfermagem*) approved Resolution No. 423/2012⁽⁴⁾. Thus, when a patient seeks health service they are received by the nurses who evaluate and apply the guiding flowchart through qualified listening and classify the patient's health needs according to risk criteria established by protocols.

The protocols support classifying the situational severity of each patient and are defined by subjective and objective parameters, as well as by the times and flows which may change at the discretion of the health institution⁽³⁾. The protocol guides nurses' performance, which is often considered the main factor responsible for the success of the risk classification, and is essential to guide the evaluation by this professional; however, its effective implementation depends on a structured and organized care network⁽⁵⁾ which is able to ensure care continuity in other health services when necessary.

At a global level, the most used protocols are: the *Australian Triage Scale*, the *Canadian Emergency Department Triage and Acuity Scale*, the *Emergency Severity Index* and the *Manchester Triage Scale*⁽⁶⁾. In Brazilian regions, public and private health institutions are developing and implementing their own protocols, although application of these international protocols are also used in full or in adapted versions as evidenced by studies⁽⁷⁻⁸⁾. In the UPA where this study took place, a protocol adapted from the *Manchester Triage Scale* is used.

In Brazil, the protocols are implemented in the ACCR, and internationally it is called emergency services triage. However, the term ACCR is used in this study to standardize discussion on the subject in the global context.

Given the different characteristics of services and the loco-regional contexts in Brazilian health institutions, consolidated experiences of implementing the ACCR based

on a guiding protocol need to be evaluated in order to build a body of knowledge capable of directing the necessary improvements for user embracement. In this sense, it should be noted that studies focused on evaluating ACCR are focused on urgency and emergency services^(3,9-12), also evidencing the scarcity of evaluative studies conducted on the scenario of Emergency Care Units, aspects that justify the relevance of investigations such as this one.

It is important to clarify that the concept of health evaluation incorporates a judgment produced regarding a health intervention (such as the practice aimed at solving health problems), and whose objective is to assess the merit, effort or value of this intervention or its respective product, seeking its improvement or modification⁽¹³⁾.

In view of the above and considering the relevance of evaluating the ACCR strategy for its improvement in urgency and emergency services, the following question is proposed: How do physicians and nurses evaluate User Embracement with Risk Classification of an Emergency Care Unit in Santa Catarina state? Thus, the objective of this study was to describe the evaluation of the structure, process and outcome of User Embracement with Risk Classification in an Emergency Care Unit from the perspective of physicians and nurses.

METHOD

An evaluative, descriptive study implementing a quantitative approach developed in an Emergency Care Unit (UPA) in the state of Santa Catarina. The UPA was inaugurated in 2012 and classified as class I, and was chosen for this research for having the minimum operating time of 2 years and for having proven qualification from the Ministry of Health.

Thirty-seven (37) of the 40 eligible subjects invited in-person by one of the researchers to participate in the study constituted the sample. Three potential participants (physicians) refused to participate. The adopted inclusion criteria were being a nurse or a physician at the UPA, regardless of the type of employment relationship, and working in the institution for at least 3 months. The choice of these professionals was due to their direct involvement in the ACCR in health institutions, which is supported by the National Policy on Emergency Care (*PNAU – Política Nacional de Atenção às Urgências*)⁽¹⁴⁾ and Resolution no. 423/2012⁽⁴⁾. The involvement of nurses and physicians in the ACCR at this UPA takes place at different moments and spaces through direct patient care. The professionals' experience time in the UPA was determined based on similar studies on the subject^(3,10-12).

Data collection was conducted from July to November 2015 implementing a validated questionnaire⁽¹⁵⁾ developed to assess the ACCR of emergency hospital services, and was adapted for this study upon prior authorization of the authors. Seven (7) of the 21 items of the instrument were modified: the term "User embracement with Risk Classification" was omitted from four items, and the term "in this sector" was removed from three items. Participants were instructed to evaluate ACCR as an action or practice of patient inclusion which takes place throughout all care service places and times, from patient arrival to discharge.

The implemented instrument is based on the Donabedian concepts for evaluating health services and is organized into two parts. Part I consists of sociodemographic data of the participants. The variable skin color or race followed the classification established by the Brazilian Institute of Geography and Statistics (*IBGE – Instituto Brasileiro de Geografia e Estatística*)⁽¹⁶⁾. Part II relates to dimensions that comprise the Donabedian triad of evaluation: Structure, Process and Outcome. The first refers to the attributes of the facilities such as human resources and organizational structure. The Process dimension is related to the activities and relationships in the service, while Outcome indicates the effects of care⁽¹⁷⁾. This triad is composed of 21 items measured using a Likert scale, with a numerical score from 1 to 5 indicating the level of agreement or disagreement of the statements; 5 represents maximum agreement (I totally agree), 1 is minimum agreement (I totally disagree), and 3 corresponds to “indifferent” or “no opinion”⁽¹⁵⁾.

For the analysis, the mean ranking of the item (MRi) was calculated (Figure 1), in which the frequency of responses (fr) was multiplied by the respective value of the Likert scale (vs) and the obtained results for each item were added up. The resulting value was divided by the total number of responses for the same item (TNi)⁽³⁾. To perform the calculation, the values of the nine negatively described instrument items (items 3, 4, 5, 7, 10, 14, 16, 19 and 20) were inverted (made positive).

To analyze the dimensions, the mean score (MS) was calculated based on the sum of the MR of the items⁽³⁾. MS corresponds to the dimension representativeness (figure 2). The calculations used in this study were adopted based on similar studies^(3,9-10). The mean for each dimension was also calculated by dividing its MS by the respective number of items.

$MRi = \frac{\sum(fr. vs)}{TNi}$	$MS = \sum MRi$
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Figure 1 – Formulas for the study calculations – Florianópolis, SC, Brazil, 2015.

For interpreting the MR, it was considered that values closer to 5 points represented a higher level of professional satisfaction, while those closer to 1 represented a lower level of satisfaction⁽³⁾. The following classification was adopted for the dimension representativeness: *Excellent*, from 31.5 to 35 points; *Satisfactory*, from 26.2 to 31.4 points; *Precarious*, from 17.5 to 26.1 points; and *Insufficient*, from 7 to 17.4 points⁽¹⁵⁾. It is possible to evaluate the level of professional satisfaction with a respective item according to the MR of each item, and to highlight its representativeness with the MS of each dimension.

The data were organized and processed in the *Epi Info*TM version 3.5.2 software program using descriptive statistics. The study was approved by the Research Ethics Committee (CEP) of the Universidade Federal de Santa Catarina under Opinion number 1.048.858/2015, and followed the recommendations of Resolution 466/12 of the National Health Council. All participants signed the Clear and Informed Consent Form.

RESULTS

The majority of the 37 study participants were physicians (n=26, 70.3%). A predominance of females (n=21, 56.8%), with white skin (n=35, 94.6%) and single (n=21, 56.8%), aged between 30-39 years (n=19, 51.4%) was observed. Regarding experience time in the UPA, participants with less than 1 year of experience (n=16, 43.3%) stood out. The majority had completed their undergraduate course from 2 to 8 years (n=19, 51.4%) (Table 1).

Table 1 – Characteristics of the participants – Florianópolis, SC, Brazil, 2015.

Variable	n	%
Professional category		
Physician	26	70.3
Nurse	11	29.7
Gender		
Female	21	56.8
Male	16	43.2
Age group (years)*		
< 30	9	24.3
30-39	19	51.4
40-49	6	16.2
50-59	2	5.4
≥ 60	1	2.7
Race or skin color		
White	35	94.6
Yellow	1	2.7
Black	1	2.7
Marital status		
Single	21	56.8
Married	11	29.7
Divorced	3	8.1
Stable union	2	5.4
Experience time in the UPA (years)		
< 1	16	43.3
1	7	18.9
≥ 2	14	37.8
Undergraduation Completion Time (years)		
< 2	7	18.9
2-8	19	51.4
≥ 8	11	29.7

*Mean = 35.4 and Standard deviation = 8.8. Note: (n=37)

The ACCR assessment is presented according to the MR and the respective dimension representativeness. In the evaluation of each item, those evaluated with a higher MR were: Prioritization of severe cases (MR=4.5), Primary care according to the severity of the case (MR=4.5), Assessment of non-severe cases (MR=4.2) and Embracing environment (MR=4.2) (Table 2).

Table 2 – Assessment of User Embracement with Risk Classification – Florianópolis, SC, Brazil, 2015.

Dimension – Item	MR*	MS**	Representativeness	Mean***
Dimension Structure	3.6	23.9	Precarious	3.4
Comfort of the user/companion				
Embracing environment	4.2			
Periodic training	2.5			
Privacy in the consultations	3.9			
Companion embracement	3.4			
Signage of the environment	3.2			
Communication between the team	3.1			
Dimension Process		21.9	Precarious	3.1
User safety and comfort	3.7			
Assessment of non-severe cases	4.2			
Knowledge regarding ACCR conducts	2.9			
Relationship between leaders and subordinates	2.9			
Flowchart discussion	2.1			
Trained team	3.4			
Reassessment of cases on hold	2.7			
Dimension Outcome	4.5	25.5	Precarious	3.6
Primary care according to the case severity				
Humanization of care	3.4			
Integration of the health team	3.4			
Information about the waiting time	3.5			
Prioritization of severe cases	4.5			
Counter-referral	2.6			
Satisfaction with the ACCR results	3.6			

MR = Mean Ranking of the item; *MS = Mean Score of the dimension; **Mean of the dimension.

The items with lower MR in order were: Flowchart discussion (MR=2.1); Periodic training (MR=2.5); Counter-referral (MR=2.6); Reassessment of cases on hold (MR=2.7); Knowledge regarding ACCR conducts (MR=2.9); and Relationship between leaders and subordinates (MR=2.9). We can also highlight that 11 (52.4%) of the 21 items evaluated had an MR between 3 and 4 points, and none of them presented a maximum MR (5 points).

Among the Donabedian dimensions, the one that received the lowest MS was the Process dimension (MS=21.9), however all dimensions were evaluated as Precarious considering the representativeness criterion. The Outcome dimension reached the highest mean (3.6) (Table 2).

DISCUSSION

All dimensions were considered precarious with means indicating that participants are not fully satisfied with the ACCR. Nevertheless, the Outcome dimension (which refers to the final product of the provided care) was the best evaluated, obtaining a mean of 3.6 which was closer to the desirable score (maximum score of 5 points), thus indicating greater participant satisfaction. Comparatively, the Process dimension (which refers to the activities performed and the relationships established in receiving care) reached the lowest satisfaction (mean=3.1), while Structure

(which evaluates material, human, financial and organizational aspects) received an intermediate level of satisfaction (mean=3.4).

The ACCR requires continuous assessments of structures, processes and outcomes in the country's health services⁽¹⁸⁾. Thus, the evaluation of the Donabedian dimensions in the present study indicates the need for improvements in implementing this device, as evidenced in other studies on hospital emergency^(3,9,11-12) in which the Structure and Process dimensions received lower mean scores.

In this respect, the relevance and prioritization of the physical structure of emergency services are highlighted since the environment influences care delivery in order to build effective and humanized health actions⁽¹⁹⁾. In this sense, nurses should adopt measures to maximize the safety, satisfaction and quality of the care to patients and their families, such as by promoting private, airy, bright and quiet environments⁽²⁰⁾. To improve the comfort and embracement of the companion/family member, options for relaxation and entertainment can also be offered while they are waiting for diagnosis and/or reassessment⁽³⁾, such as internet access (*wi-fi*) and television.

With regard to the evaluation of the dimensions items, it was possible to observe that only four out of 21 items presented MR values closer to 5 points, representing a higher level of professional satisfaction: an embracing environment,

assessment of non-severe cases, primary care according to the severity of the case and prioritization of severe cases. These data deserve to be highlighted as a result of what they would represent in the patient's health and recovery status, since primary care according to the severity and prioritizing severe patients can positively impact morbidity and mortality.

In this sense, a study carried out in Minas Gerais identified a direct relationship between the severity of patients' classification and the length of hospital stay, concluding that the implemented risk classification system was a good predictor for the risk of death and hospital stay⁽²¹⁾. In São Paulo, patients with high care priority presented hospitalization and death rates which were 5 and 10.6 times higher, respectively⁽²²⁾. These findings reinforce the relevance of prioritizing care according to severity, as well as its accomplishment in an embracing environment, both evaluated positively in this study.

Regarding the assessment of non-severe patients, the need for prehospital emergency nurses being able to assess and classify the patients into the most appropriate level of care was verified in Sweden, since many of those seeking the emergency service do not receive a level of care that is considered ideal⁽²³⁾. Although the professionals from the present study have agreed that they assess non-serious cases, the quality of this evaluation is questioned, since there was a low agreement between the participants in relation to periodic training, to knowledge regarding ACCR conducts and the flowchart discussion.

Professional experience is considered by UPA nurses as an important prerequisite to act as a classifier, in addition to other skills, despite them not being required for the performance of this function⁽⁵⁾. In this way, classifying risk is understood as a complex activity which depends on nurses' skills and competences, as well as on their interpersonal relationships and communication⁽¹⁸⁾. In Australia, the inexperience of nurses and their limited training for risk classification were identified among the problems and potential vulnerabilities of the classification process⁽²⁴⁾. However, with regard to the ACCR, its implementation not only requires nurses' qualification, but of all workers in the urgency and emergency service⁽²⁵⁾.

In the present study, an embracing environment and privacy during consultations contribute to the nurse's evaluation in the ACCR. A private and appropriate environment for risk classification stimulates and allows free expression, contributing to nurses being able to collect accurate information. Thus, we suggest that the architectural design of this area takes into consideration the confidentiality of information⁽²⁶⁾.

In the evaluation of the 21 ACCR items, six stood out for having lower MR scores (less than 3), indicating lower agreement and level of professional satisfaction. Four (4) of these items comprise the Process dimension, one is part of the Structure dimension, and the other is part of the Outcome dimension. Most of these items are related to care management: periodic training, knowledge regarding ACCR conducts, relationship between leaders/subordinates and flowchart discussion. This signals weaknesses that require

investigation in order to unveil their causes and to guide improvement measures. A study developed at the UPA in Santa Catarina revealed that the facilitating conditions for nurse management are focused on team work, emphasizing interpersonal relationships⁽²⁷⁾.

Among the evaluated items, flowchart discussion obtained the worst negative evaluation, deserving emphasis since the clinical priority established in the ACCR requires nurses to have full control of this tool. When the nurse does not have enough knowledge regarding this resource, they may underestimate or overestimate the risk in the evaluation, with repercussions ranging from complications to death, in addition to patient dissatisfaction and of their family members awaiting care service.

Reassessment of the patients on the waiting list and Counter-referral, which include items evaluated with low MR scores, had similar results to those from a study developed in hospital emergency services in Paraná. Regarding patient reassessment, the suggestion is to guide nurses who perform the ACCR to sensitize them on the importance of monitoring the evolution of those awaiting medical care⁽³⁾. Another investigation carried out in hospital emergencies corroborates that reassessing patients does not happen as it should; nonetheless, once the risk classification is performed, the patient should be periodically reassessed by the nurse prior to receiving medical attention⁽¹⁰⁾.

Regarding the Counter-referral, we can point out the relevance of deepening discussions on the reasons for professionals' dissatisfaction with it, reasons which imply weaknesses in basic care and lack of integration in the care network⁽³⁾. UPA articulation with other levels of care does not exactly follow what is recommended by the PNAU⁽²⁸⁾, similar to the example of the precarious articulation between the UPA and primary care⁽²⁹⁾.

In order for the ACCR proposal to become known by all the involved professionals and with consequent adequate referral of the patients, the need for discussions between managers of the network and of the urgency and emergency service is emphasized, along with the establishment of Counter-referral agreements with the service⁽²⁵⁾. Developing agreement protocols by managers can guarantee effective execution of Counter-referrals⁽³⁰⁾. The continuity of care and service at the UPA may be compromised when this does not exist or when it occurs improperly, generating overcrowding in the service, increased waiting time and dissatisfaction between patients and professionals. One study reinforces that a high number of patients with clinical conditions considered non-urgent increases the wait for medical consultation in the UPA, and contributes to overcrowding, causing agitation among the patients⁽²⁹⁾. Once again, this points to the need for preparation and communication between professionals, in addition to the permanent discussion of the flowchart and the constant re-assessment of the patients awaiting care service^(3,7).

This study corroborates the findings from other ACCR evaluations performed in the hospital emergency scenario^(3,10-11), presenting the aspects of this device that were

evaluated more positively and those that need improvements for quality care according to the ACCR guidelines.

The number of participants and the fact that they belong to only one Emergency Care Unit may present a limitation in the study regarding a generalization of the results. In addition, the inclusion of professionals working in the UPA for at least 3 months may have limited the evaluation of the ACCR, considering that the item scores tended toward neutrality. However, we were careful in including the opinion of different professional categories involved in the ACCR.

CONCLUSION

No items related to the User embracement with Risk Classification were considered as totally satisfactory by UPA physicians and nurses. The dimensions were evaluated as precarious, with the Process dimension receiving the worst evaluation, followed by Structure and Outcome.

In this study setting, the best evaluation was for primary care according to the severity of the case and the prioritization of severe cases, which are part of the Outcome dimension. These items are especially related to nurses' performance in the evaluation and classification of risk. However, considering the importance of these aspects for the quality of services provided to the population, strategies can be implemented to achieve full professional satisfaction. The same applies to the items "periodic training" and "flowchart discussion", part of the Structure and Process dimensions, respectively, which pointed to a lower level of participant satisfaction.

The results of the study contribute to the team as well as to local and municipal management, enabling improvements in the ACCR based on its guidelines proposed by the Ministry of Health. Developing future studies using qualitative approaches can contribute to deepen the understanding of the factors related to inadequacies in the ACCR in the UPA.

RESUMO

Objetivo: Descrever a avaliação da estrutura, processo e resultado do Acolhimento com Classificação de Risco, na perspectiva dos médicos e enfermeiros de uma Unidade de Pronto Atendimento. **Método:** Estudo avaliativo, descritivo, quantitativo, desenvolvido em Santa Catarina. Dados coletados com instrumento validado e adaptado, constituído por 21 itens distribuídos nas dimensões Estrutura (instalações), Processo (atividades e relações no atendimento) e Resultado (efeitos do atendimento). Na análise, aplicaram-se a estatística descritiva, o cálculo do *Ranking* Médio e o da Pontuação Média. **Resultados:** A amostra foi de 37 participantes. Dos 21 itens avaliados, 11 (52,4%) tiveram *Ranking Médio* entre 3 e 4, e nenhum atingiu o máximo (5 pontos). A "Priorização dos casos graves" e o "Atendimento primário por gravidade do caso" obtiveram maior *Ranking Médio* (4,5), enquanto a "Discussão sobre fluxograma" revelou menor *Ranking* (2,1). As dimensões Estrutura, Processo e Resultado atingiram, respectivamente, as pontuações médias 23,9, 21,9 e 25,5, indicando avaliação Precária (17,5 a 26,1 pontos). **Conclusão:** Há precarização do Acolhimento com Classificação de Risco, em especial no que se refere ao processo, que obteve menor nível de satisfação dos participantes.

DESCRITORES

Enfermagem em Emergência; Acolhimento; Avaliação de Serviços de Saúde; Serviços Médicos de Emergência.

RESUMEN

Objetivo: Describir la evaluación de estructura, proceso y resultado del Acogimiento con Clasificación de Riesgo, en la perspectiva de los médicos y enfermeros de una Unidad de Pronto Atención. **Método:** Estudio evaluativo, descriptivo, cuantitativo, desarrollado en Santa Catarina. Datos recolectados con instrumento validado y adaptado, constituido de 21 puntos distribuidos en las dimensiones Estructura (instalaciones), Proceso (actividades y relaciones en la atención) y Resultado (efectos de la atención). En el análisis, se aplicaron la estadística descriptiva, el cálculo del Ranqueo Medio y el de la Puntuación Media. **Resultados:** La muestra fue de 37 participantes. De los 21 puntos evaluados, 11 (52,4%) tuvieron Ranqueo Medio entre 3 y 4, y ninguno alcanzó el máximo (5 puntos). La "Priorización de los casos graves" y la "Atención primaria por gravedad del caso" obtuvieron mayor Ranqueo Medio (4,5), mientras que la "Discusión sobre flujograma" reveló menor Ranqueo (2,1). Las dimensiones Estructura, Proceso y Resultado alcanzaron, respectivamente, las puntuaciones medias 23,9, 21,9 y 25,5, indicando evaluación Precaria (17,5 a 26,1 puntos). **Conclusión:** Hay precarización del Acogimiento con Clasificación de Riesgo, en especial en lo que se refiere al proceso, que obtuvo menor nivel de satisfacción de los participantes.

DESCRIPTORES

Enfermería de Urgencia; Acogimiento; Evaluación de Servicios de Salud; Servicios Médicos de Urgencia.

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