

Organization of multidisciplinary work aimed at providing care for polytrauma victims: a situational diagnosis

Organização do trabalho multiprofissional no atendimento à vítima de politrauma: diagnóstico situacional Organización del trabajo multidisciplinario en la atención a víctimas de politraumatismo: diagnóstico situacional

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ABSTRACT

Objective: to analyze the organization of multidisciplinary work aimed at providing care for polytrauma victims. **Method:** qualitative, exploratory and descriptive study carried out in the emergency department of a referral hospital for polytrauma care located in the southern region of Brazil, with 30 professionals including nurses, nursing technicians and doctors through structured interviews and non-participant observation, held in May 2023. An interpretative analysis was carried out and data were grouped and organized into a mind map. **Results:** three axes emerged: Structure - inadequate physical structure, ineffective regulation and workforce; Process – training and communication; and Outcome: lack of evaluation and leadership in care. **Final considerations:** it was possible to highlight factors such as difficulties in the physical structure, shortage of professionals, communication problems and lack of continuing education. Furthermore, the study revealed individual initiatives to overcome limitations and mutual collaboration to face critical moments. The organization of the multidisciplinary team stands out as a key aspect in the care of polytrauma patients.

Descriptors: Emergencies; Multiple Trauma; Patient Care; Patient Care Team.

RESUMO

Objetivo: analisar a organização do trabalho multiprofissional no atendimento à vítima de politrauma. **Método:** estudo qualitativo, exploratório e descritivo realizado na emergência de um hospital referência em politrauma na região sul do Brasil, com 30 profissionais enfermeiros, técnicos de enfermagem e médicos, por meio de entrevistas estruturadas e observação não participante, em maio de 2023. Realizou-se análise interpretativa com agrupamento e organização dos dados em um mapa de associação de ideias. **Resultados:** emergiram três eixos: Estrutura - estrutura física inadequada, regulação ineficaz e força de trabalho; Processo – capacitação e comunicação e; Resultado: ausência de avaliação e liderança no atendimento. **Considerações finais:** foi possível evidenciar dificuldades na estrutura física, insuficiência de profissionais, problemas de comunicação e ausência de educação permanente. Ainda, o estudo revelou iniciativas individuais para superar limitações e colaboração mútua para enfrentar momentos críticos. Destaca-se a organização da equipe multiprofissional como um papel fundamental no atendimento à vítima de politrauma.

Descritores: Emergências; Traumatismo Múltiplo; Assistência ao Paciente; Equipe de Assistência ao Paciente.

RESUMEN

Objetivo: analizar la organización del trabajo multidisciplinario en la atención a víctimas de politraumatismo. **Método**: estudio cualitativo, exploratorio y descriptivo realizado en la sala de emergencia de un hospital de referencia en politraumatismo de la región sur de Brasil, con 30 profesionales enfermeros, técnicos en enfermería y médicos, a través de entrevistas estructuradas y observación no participante, en mayo de 2023. Se realizó un análisis interpretativo con agrupación y organización de datos en un mapa de asociación de ideas. **Resultados:** surgieron tres ejes: Estructura - estructura física inadecuada, regulación ineficaz y fuerza de trabajo; Proceso – capacitación y comunicación y; Resultado: falta de evaluación y liderazgo en la atención. **Consideraciones finales:** se observaron problemas en la estructura física, déficit de profesionales, problemas de comunicación y falta de educación continua. Además, el estudio reveló iniciativas individuales para superar las limitaciones y colaboración mutua para afrontar momentos críticos. Se destaca que la organización del equipo multidisciplinario es fundamental para la atención de las víctimas de politraumatismo.

Descriptores: Urgencias Médicas; Traumatismo Múltiple; Atención al Paciente; Grupo de Atención al Paciente.

INTRODUCTION

Victims of polytrauma have more than one traumatic injury resulting from a high-impact event with a high release of energy that varies in degree of intensity and severity, causing serious and potentially fatal injuries¹. Care in these cases consists of a complex and challenging situation for the multidisciplinary team, as it requires an integrated and coordinated approach between different specialties to ensure the best result for the patient².

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To guide healthcare services aimed at victims of traumatic injuries in Brazil, the Ministry of Health launched Ordinance No. 1365 in 2013, establishing the trauma care line in urgent and emergency care networks with the purpose of structuring, strengthening, expanding and training the multidisciplinary team, thus reducing the number of deaths among the victims. This ordinance also aims to complement the previous ones regarding urgent and emergency care networks and organization of healthcare work in emergency services³.

Still in Brazil, polytrauma is one of the main causes of death, mainly among young people and adults, with over 33 thousand fatal accidents in 2020⁴. The mortality rate in Brazil exceeds 25 deaths per 100 thousand inhabitants⁵, exceeding the global average of 18 deaths, which shows the relevance of identifying polytrauma as a public health problem and the importance of promoting preventive actions and an efficient approach to care for these victims⁶.

Approaching polytrauma victims in hospitals is a complex and multidisciplinary process that requires a trained and experienced team, as well as adequate equipment and infrastructure. The main goal is to ensure the stabilization of vital functions and prevent complications⁷. The initial assessment of polytrauma victims is carried out using the XABCDE trauma protocol, which seeks to quickly identify and treat the most serious and potentially lethal injuries⁸.

The organization of work in the emergency department is essential to ensure efficient and quality care for patients, in which each team member must be aware of their practical roles and specific responsibilities, maintaining a clear division of tasks and responsibilities. This approach avoids conflicts and ensures that all patients' needs are properly met⁹.

To ensure safe and quality care for polytrauma patients, it is essential to analyze how the organization of work in the emergency department can influence the health outcomes of this very specific population, especially due to the growing waves of violence in countries like Brazil¹⁰, which creates demands of different levels of complexity in the healthcare service, often causing disabling or irreversible damage to the health of these patients.

Estimates show that traumatic injuries result in a cost of 30 billion reais per year to public health, with an average of eleven victims with permanent sequelae and one death for every 380 emergency visits¹¹.

In this context, the study aims to respond to the following objective: to analyze the organization of multidisciplinary work aimed at providing care for polytrauma victims in the emergency department.

METHOD

This is an exploratory, descriptive study with a qualitative approach carried out in the emergency department of a reference hospital for polytrauma care located in southern region of Brazil, with the participation of members of the multidisciplinary team (doctors, nurses and nursing technicians), who had been working in emergency care for more than six months. Professionals who were on leave or vacation and students of any level were excluded from the research study. Data collection followed the convenience sampling method and the theoretical data saturation technique, being carried out between April and May 2023.

The hospital in which the study was carried out is public, was founded in 1966, is a Level II Specialized Hospital characterized by having urgency/emergency units and adequate technological and human resources for general clinical and surgical care. It has Inpatient Units, 24-hour External Emergency, Intensive Care Unit (ICU), Surgical Center, Specialty Outpatient Care Center, Diagnostic Imaging Services and Diagnostic and Therapeutic Support Service. The Hospital also has a High Complexity Care Unit for Neurology/Neurosurgery (Neuro-ICU), a High Complexity Care Unit for Orthopedic Trauma, Organ and tissue removal, B-level Surgical Oncology, a High Complexity Oncology Unit exclusively for Hematology and a High complexity care unit for Nephrology. The Emergency department consists of seven medical offices, two rooms with 12 armchairs each for less complex care, a critical patient care room with 14 beds, three rooms for bandaging and minor surgeries, three resuscitation rooms with three beds each, a standard observation room with 20 beds, a risk assessment room, a reception, a pharmacy, two prescription rooms, three sluice rooms and three Nursing stations.

An average of seven nurses, 16 technicians and 12 doctors circulate in the emergency area per work shift (night shift and day shift), caring on average for 90 people during the day, 40 people at night and around 25 ambulances per day. Work shifts are usually scheduled as follows: for every 12 hours worked, there is a 60-hour rest, requiring a total of three teams to complete the scheduled shifts.



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Participants were invited to learn about the object of study in person, through an informal conversation and, given their interest, their contact information was collected so that the interviews could be carried out at a time and place convenient for them.

The semi-structured interviews were carried out from April to May 2023 during the work shift of the interviewed professionals; they were previously scheduled, and contact was made via telephone using a guiding script with questions related to topics focused on the work organization aimed at providing care for polytrauma victims.

The instrument for collecting data addresses the aspects of emergency service, knowledge related to identifying signs of polytrauma, barriers to practice, strengths and difficulties.

The interviews were carried out in person, lasted an average of 30 minutes and were recorded with the consent of the interviewees and later transcribed in full. Non-participant observation was carried out during four work shifts (day shifts and night shifts) of the professionals involved, totaling 25 hours.

Data analysis was carried out through dialectical-hermeneutics¹², with the theoretical framework of quality assurance¹³ and its three pillars, considering that quality is closely related to the forms of work organization. To organize data, Microsoft Word was used to transcribe, group and organize the data into a mind map (Figure 1).

Quote	First encoding	Second encoding	
[] what gets in our way is the fact that we don't have an area just for polytrauma care, a	Lack of specific physical space for care provision	Inadequate physical structure	Axis 1 - Structure
specific trauma room.	-		

Figure 1: Example of coding using the mind map. Florianópolis, SC, Brazil, 2023.

The study followed the recommendations of the National Health Council and was approved by the Research Ethics Committee. Participants signed the Free and Informed Consent Form and were identified in the results according to the initial letter of each profession: N – Nurses, D – Doctors and NT – Nursing Technicians, followed by the number corresponding to the order of the interviews.

RESULTS

Eight doctors, 12 nurses and ten nursing technicians participated in the interviews. In accordance with the three pillars of quality assurance¹², the results are arranged in three main categories – Structure, Process and Outcome - with subcategories that express in detail the organization of work in emergency care for patients with polytrauma.

Axis 1 – Structure: resources and inputs

It was found that factors such as inadequate physical structure, ineffective regulation, which covers aspects related to the work stages, the high number of patients to be assisted and the consequent work overload (physical and psychological), the high levels of demand experienced by the professionals and the current workforce are challenges faced by emergency teams.

I think it's the physical space, because there is nowhere to accommodate the patient, they usually stay in the outpatient ward [room in which patients are left on stretchers] all together, so you have open-fracture patients alongside hypertensive patients and patients with other comorbidities, all in the same place. (N10)

Physical space for sure, the hospital doesn't have a helipad, the door to the resuscitation room, the red room, is more than twenty meters away from the entrance, the scan room is two floors up, the surgical center is five floors up [...] there isn't a trauma room either, which is quite troubling. (D6)

We realize that we are still in the early stages of caring for a condition that is extremely lethal, leaves longlasting sequelae and affects patients at their most productive age. [...] Here in this hospital, the best option would be to have a Trauma Room. (D1)

This week, we had a total of sixty-eight patients in the emergency department, how can we manage that? (N3)

Usually, we find it more difficult to take patients to get their tests done, because at night we need the doctor to call the scan room and the doctor has to go upstairs with us and the patient, so sometimes they have a high level of demand and it takes a while to make things happen, so it's a serious issue indeed. (NT8)

I think the worst thing is the lack of professionals, [...] but we always try to sort things out in a way that we can provide care for the victim. (N6)





There is a lack of staff, in fact, to provide better care for these patients; in the end, things come together, we always manage to do the best we can, but if we had more staff, I think it would work better. (NT9)

Axis 2 - Process: activities and procedures used

The lack of training programs aimed at caring for polytrauma patients is a widely evident and relevant issue in the context of the professionals consulted. Training programs, when carried out, are conducted independently by professionals, without direct support from the institution.

No training is provided by the institution. You must do it off your own back or just gain experience through day-to-day practice. (N5)

We read a lot about it, I learned a lot here at the residency program, as they provide reference service for trauma care, so since I gained all this experience here, I ended up learning, but I don't have an ATLS course. (D4)

Regarding communication, some of the professionals emphasized that the quality of communication depends on the staff on duty, highlighting that communication flows satisfactorily depending on the professionals working on the day. This effectiveness is closely linked to the bond established between team members, which appears as a facilitating mechanism of communication.

The things with communication is that it depends a lot on the team that is working with you, for example, on today's team, there is a doctor who is more of a leader, there is a nurse who is more of a leader, so we manage to leave the focus on them so that just one of them calls the shots and the others execute the tasks. So, this is the good thing, but that's not how it works for all teams, unfortunately. (N8)

The biggest issue nowadays is that the firefighters bring the patients, fill in their medical records, pass them on to the doctors but they don't pass them on to us, the nursing staff, we have already written several letters communicating this fact (N2).

The SAMU (Brazil's National Emergency Service) ambulance arrived but there was no prior warning to the team in the Resuscitation Room. Upon arrival, the professionals were greeted at the door by a resident doctor in the first year of general surgery, the SAMU doctor briefly explained what happened while they were directed to the Resuscitation Room (Observation note).

Axis 3 - Outcome: effect of actions and procedures on the patients' health status

All interviewees were unanimous in naming some factor related to the lack of discussion concerning the case after the polytrauma victims were stabilized, highlighting the lack of interaction and formal communication between professionals from different areas of activity after providing care to patients, which is an important requirement for quality assessment. Particularly when it comes to leading care for polytrauma victims, no one assumes a specific leadership role, each person seems to take a certain approach to be used during care.

Among us, doctors, it will often depend on the protocol to be followed, if there is any need for adjustment, sometimes we hold meetings between us and the staff on duty on the day, but we don't do multidisciplinary meetings focused on trauma. (D3)

No, we don't usually set up meetings to discuss anything, not even between the Nursing staff. (NT2)

There was no type of case discussion between the members of the multidisciplinary team at any time after care. (Observation note)

So, there are teams and teams. Some teams like to encourage their members to sit down, talk, 'so, could we have done things better? How was the organization?'. There are teams that don't do that. But it really depends on the team, there's no set routine. (N7)

We report the cases, but only between orthopedists, to decide which type of treatment to follow. (D7)

No, we don't usually discuss cases between team members, everything happens too quickly. (NT1)

No one leads, everyone already knows what they must do. In case of a cardiac arrest, [when there is the need for] stabilization, we follow a priority order, that is, what is the priority to stabilize this patient, but there isn't really a set routine, things also depend on the team you are part of. (D5)

The Nursing team began the care procedures, and each team member carried out a certain task (venous puncture, monitoring, victim's clothing removal, positioning, bladder catheterization, sample collection, blood gas analysis, etc.). The division of tasks was not done in advance, it was carried out on the spot, with no sort of communication. (Observation note)

DISCUSSION

Although essential, emergency departments suffer from overwhelming patient demand, structural problems, scarcity of human and material resources and the significant increase in the rates of violence and traffic accidents¹⁴.





Faced with so many inadequacies, the quality of care in emergency units gets compromised, given the fact that critically ill patients require quick, instant and safe care¹⁵.

In a situational diagnosis carried out in a cardiac emergency unit in Brazil, it was found that the deficit in the workforce leads, in addition to work overload, to a decrease in these professionals' performance, which, together with other structural problems, cause collective professional dissatisfaction in the work environment, a situation significantly compromised due to quality decline^{16,17}.

Studies compiled in review reports showed that inadequate physical structure also constitutes an obstacle to humanized care in emergency units which, although they are dynamic and display characteristics of high-turnover services, they must maintain humanized care focused on patient needs¹⁵. The physical structure of emergency services considered references for trauma care must include imaging scans such as chest and pelvis x-rays and FAST (*Focused Assessment with Sonography for Trauma*), as they constitute instruments of high sensitivity and specificity for the initial investigation of polytrauma patients¹⁸. The reality found in this study confirms the scenario of emergency departments in the national territory, indicating the same difficulties in terms of inadequate physical structure¹⁹.

Polytrauma patients require very specific care from healthcare teams, which has become an even more complex challenge given the importance of initial care for achieving good results and its intimate connection with successful injury recovery¹⁸. The body of polytrauma patients is hypermetabolic, hypercoagulable and extremely stressed, which requires intense and continuous care from the team²⁰.

Managing emergency services is a challenging task, especially when it comes to the workforce. It is not only about having the appropriate number of professionals, but also dealing with factors such as their lack of/low qualification, staff recruitment methods (temporary professionals tend to quit after gaining experience), low retention and high turnover, problems that result in discontinuity of care²¹.

For polytrauma patient care to be effective, professionals working in emergency departments must have prior knowledge and sufficient training. Studies show that carrying out frequent training programs and/or qualification courses contributes to changing teams' behavior, especially in terms of communication and interpersonal relationships, in addition to keeping them motivated as they are able to experience positive results over the course of care^{22,23}. The need for training to work in emergency services and the use of care protocols for polytrauma patients contributes to standardized, uniform, continuous, comprehensive, effective and quality care^{20,24}, which was not evidenced in this study.

Another highlighted aspect refers to the communication between professionals, indicated in this study as a barrier that has a very negative influence on care. The absence of specific meetings to discuss cases and evaluate care is strongly associated with the negative aspect of working in the emergency service. The lack of communication can also lead to problems regarding humanization of care and patient safety. Among the main facilitating factors for implementing collaborative practices in the emergency service, a strong team relationship, proper training and, above all, good communication are essential to improve care for polytrauma patients^{22,23}.

In this study, it was possible to identify situations in which regulation and communication were not properly met. These failures result in delayed care, inadequate referrals and lack of coordination between emergency services, thus compromising the quality and effectiveness of care provided to patients.

Discussing the case after the victim has been stabilized in the emergency unit plays a crucial role in providing quality healthcare. This practice, known as clinical discussion, involves retrospective analysis of the care provided, with the aim of reviewing and learning from the experience. By promoting the sharing of experiences, it is possible to identify strengths and weaknesses, improve decision-making, strengthen teamwork and identify knowledge gaps, thus contributing to continuous learning, professional improvement and excellent care²⁵.

Multidisciplinary meetings based on knowledge exchange between members of the multidisciplinary team aim to improve decision-making, organize care and understand how decisions are made²⁶. A study showed that communication between the multidisciplinary team may not be linear, since information can be lost between different teams, so it was identified that a multidisciplinary safety *briefing*, a type of care summary, emerged as a type of short meeting between team members in a pre-determined format where all members can collaborate and discuss challenges contributes to patient safety during emergency situations, supporting effective communication between team members and directly improving the safety of the patient involved²⁷.



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Mutual help between professionals, in this study, appears as a protective factor for the patient, as the interaction between teams contributes to healthcare responsiveness as well as to the synchronicity of each stage of the care process. This behavior is usually related to team support and leadership, in which the leader is considered the one who delegates tasks, supports professionals and coordinates care²⁸. Hence the relevance of implementing protocols for safe patient care in the emergency service focused on safety and quality of care, in addition to promoting management activities and continuing education for the teams²⁹.

The organization of work is a defining element of human labor and is oriented towards the satisfaction of collective and individual needs that combine a series of material and non-material factors, requiring specific work-related and institutional conditions for professionals to carry out their work (resources of all types, workforce, time, structure and tools)³⁰.

In the reports analyzed, a complex experience permeated with challenges was noted, with an emphasis on the technical division of labor in the emergency service, resulting in a work organization that is poorly articulated between professionals, distancing them from the requirements prescribed for quality improvement.

Study limitations

The limitations of the study refer to the fact that it was carried out in a single emergency unit, thus failing to reflect the reality of all emergency services in the country that provide polytrauma care. Instead, studies carried out in more structured emergency departments may provide inputs to make significant changes in the units that require them.

FINAL CONSIDERATIONS

The data obtained regarding the work organization of emergency professionals who care for polytrauma victims corroborate findings from previous research, which highlighted challenging factors for work organization such as physical structure, insufficient human resources, communication problems, lack of continuing education, among others, which make it difficult to organize the work as a whole. Furthermore, there is evidence of an organization marked by the technical or partial division of work by limiting the participation of medical and nursing professionals to a systematic, individual and not much reflective work.

However, even faced with the adversities found in the work environment and the complexity of patients in these conditions, professionals still show individual initiative as an attempt to fill gaps, teams prove to be attentive and willing to provide the best possible care, and they are always organized around the patients needs.

The studied reality maintains the characteristics of previous findings, which can be found in other realities. The vital importance of work organization in the emergency service is emphasized, especially regarding the working conditions of nursing and medical professionals, focus of this study. Therefore, reference services must have an adequate physical structure and continuous training must be provided to professionals to improve the responsiveness and effectiveness of their actions, as these are critical components for improving the quality of care.

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Conceptualization, E.C.Z. and E.C.N.F.; methodology, E.C.Z. e E.C.N.F.; validation, E.C.Z. e E.C.N.F.; formal analysis, E.C.Z., E.C.N.F., D.D.L., M.S. and J.E.W.B.; investigation, E.C.Z. and M.S.; resources, E.C.Z. and M.S.; data curation, E.C.Z., E.C.N.F. and M.S.; manuscript writing, E.C.Z., E.C.N.F., D.D.L. and M.S.; writing – review and editing, E.C.Z., E.C.N.F., D.D.L., M.S. and J.E.W.B.; visualization, E.C.Z., E.C.N.F., D.D.L., M.S. and J.E.W.B.; supervision, E.C.N.F.; project administration, E.C.N.F.; acquisition of financing, E.C.N.F. All authors read and agreed with the published version of the manuscript.