



Orthopaedic nursing challenges in poly-traumatised patient management: A critical analysis of an Orthopaedic and Trauma Unit

Carlo Biz MD (Assistant Professor) ^{a,b,*}, Lisa Buffon RN (Registered Nurse - Adult RN1) ^{b,c}, Roberto Marin MD (Orthopaedic, Trauma Trainee) ^a, Natalia Petrova RN (Orthopaedic, Trauma Clinical Coordinator) ^b

^a Orthopaedic and Traumatology Clinic, Department of Surgery, Oncology and Gastroenterology (DiSCOG), University of Padua, Padova, Italy

^b Orthopaedic and Traumatology Clinic, Padua Hospital, Padova, Italy

^c Edith Cavell Campus, Bretton Gate, Peterborough, Cambridgeshire PE3 9GZ, United Kingdom

KEYWORDS

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Management;
Nursing;
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Service improvement;
Team approach

Abstract *Introduction and background:* Trauma is the most frequent cause of death in people under 40 years old. It is an important problem not only because of the high mortality but also because of the consequential disability that can lead to serious economic consequences.

Study aims: This descriptive, comparative study investigates the definitive management of poly-traumatised patients in an Italian Orthopaedic Ward in order to highlight its strengths and weaknesses in comparison with the most recent literature. This has led to the development of a pre-established algorithm for evaluation, preventive care and management of the poly-trauma patient and a flow-chart for improved patient care.

Research methods: A five-step observational and exploratory approach was employed in this study which critically analysed the nursing management of 60 multiple trauma patients admitted to our Orthopaedic Unit from April 2013 to October 2014.

Results: The findings highlight the need for adherence to plans of care, which can be approached by a shared management of poly-trauma patients that involves the medical team, the patient and his family/caregiver.

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Manuscript authenticity: We declare that this article represents honest work.

* Corresponding author. Orthopaedic and Traumatology Clinic, Department of Surgery, Oncology and Gastroenterology (DiSCOG), University of Padua, via Giustiniani 2, 35128 Padova, Italy. Tel.: +39 049 8213311; fax: +39 049 821 3365.

E-mail address: carlo.biz@unipd.it (C. Biz).

Discussion: The protocols and guidelines in use in our Orthopaedic and Trauma Unit are in line with European standards, although there is still margin for improvement. The study has led to the development of an algorithm that allows health professionals to have reference values for the care of polytrauma patients.

Conclusions and recommendations: This study demonstrates the use of theoretical and practical tools for the evaluation and management of poly-traumatised patients during their hospital stay. We recommend the use of both proposed tools: the general algorithm and the flow-chart for the management of the poly-trauma patient, as they allow identification of barriers and facilitators related to the implementation of international guidelines, currently well-defined for Emergency Departments but not yet for Orthopaedic Units.

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Editor comments

In-depth analysis of current practice in a hospital unit in order to compare current practice to contemporary guidance is no easy undertaking. It involves the collaboration of all members of the health care team alongside patients and their families. It also involves the ability to be self-analytical and self-critical and to recognise need for improvement. However, self-criticism is one of the hallmarks of a unit or department led by the need to continuously improve the care provided. This detailed analysis of the practice of the team within one unit explores the complex nature of multidisciplinary care of the patient who has sustained poly-trauma and the many different facets of that care. It offers those working in and leading other units an overview of definitive care of the severely injured trauma patient and a snap-shot of how one unit has approached its own development and quality improvement.

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Introduction and background

Traumatic injuries are the major cause of death and disability in the populations of developed countries, especially in young people between the ages of 15 and 44 years. This trauma accounts for nearly 50% of the world's injury-related deaths (Parker and Magnusson, 2015). In addition to the considerable number of deaths, millions more are wounded or suffer other non-fatal health consequences due to their injuries (Jansen et al., 2010). As Mock and Chearian (2008) confirm, trauma is a major public health problem and contributes a large burden of disability and suffering. According to the Institute for Health Metrics and Evaluation (2014), in 2014 injuries accounted for 11% of global mortality and 13% of all disability-adjusted life-years. The presence of injuries to the extremities in poly-trauma patients has been reported to be associated with worse outcomes, longer hospital stay and more need for blood transfusions (Banerjee et al., 2013). In Italy in 2013, according to ISTAT (Ministero della Salute, 2014; www.istat.it), road accidents were the commonest cause of death, with 136,438 events involving 184,683 injuries and 1421 deaths. In 42.1% of cases, the age of the injured was between 20 and 44 years (968 in total) of which of 219 cases 20–24 years old. This resulted in an annual social

spending of between 24 and 31 million euros, 2% of Italian GDP (Ministero della Salute, 2014; www.istat.it). In the United States, in 2000, 50 million injuries required treatment costing \$406 billion with males accounting for approximately 70% (\$283 billion) of the total costs of injuries (Parrot, 2000). The costs are expected to increase logarithmically by 2030 and road injuries are expected to cost 518 billion US dollars globally (Institute for Health Metrics and Evaluation, 2014).

The term “polytrauma” is used interchangeably with multiple trauma, major injuries and severe trauma. These terms define trauma patients whose injuries involve multiple body regions, organ systems or cavities (Butcher et al., 2013). However, lack of a current precise definition affects classification of patients and leads to differences in treatment and management strategies (Kucukdurmaz and Alijanipour, 2015). For nurses, polytraumatised patients are difficult to care for because they are usually young and at high risk of death due to comorbidities (Alzghoul, 2014).

The nature of traumatic events can vary, e.g., work-related injuries, domestic or road accidents. The latter is the most common and usually results in multiple injuries. The most difficult challenge in caring for these patients, following haemodynamic stabilisation, is the early diagnosis and treatment of crush injuries, compartment syndrome, the

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