



The effect of supportive emergency department nursing care on pain reduction of patients with Red Sea marine wildlife injuries



Osnat Raviv RN, MN (Head Nurse)^a, Vered Delbar RN, PhD (Senior Teacher)^b,
Jacob Arad MD, MPH (Head)^a, Orli Grinstein-Cohen RN, PhD (Senior Teacher)^{b,*}

^a Emergency Department, Yoseftal Medical Center, Eilat, Israel

^b Recanati School of Community Health Professions, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer-Sheva, Israel

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ABSTRACT

Introduction: The emergency department at Yoseftal hospital in Eilat is on the shore of the Red Sea, and it is visited by patients with marine wildlife injuries. The purpose of this study was to examine the effects of supportive nursing care on the pain level of patients with Red Sea marine wildlife injuries.

Method: A prospective quantitative study including 102 patients admitted to the emergency department. The study included a study group (N = 50) and a control group (N = 52). Both groups rated their pain level on the VAS before and after receiving treatment. The control group received the usual treatment, and the study group received the usual nursing treatment along with structured patient guidance and support.

Results: There was a significant difference in the level of pain after the intervention between the control and the study group. In the study group, the level of pain was significantly reduced compared with the control group ($p < 0.001$).

Discussion: Nursing training and patient guidance contributed to increasing cooperation with patients and pain reduction. Therefore, training interventions should be structured and assimilated as an integral part of nursing practice.

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1. Introduction

Yoseftal hospital in Eilat is a community hospital located on the shore of the Red Sea. It is a very small (65 beds) and isolated hospital giving medical care to Eilat residents, rural settlements and military bases in a 100 km radius. Due to its geographical separation from the rest of Israel, emergency medicine is the core of the hospital. 55,000 patients arrive each year (an average of 160 every day) representing all common medical problems as well as unique ones such as diving accidents, environmental emergencies and patients with marine wildlife injuries. This is a unique patient population that is not regularly encountered in other emergency departments around Israel. On a world scale, this special patient population is recognized as distinct in areas such as the temperate or tropical waters of the Indo-Pacific region, North American and European waters (Atkinson et al., 2006), and also in Jordan, in the Gulf of Aqaba at the north end of the Red Sea (Mutair et al., 2006).

2. Background

Eilat is seen as the definitive vacation resort town in Israel; however, the Red Sea embodies threats and hazards. Visitors and residents are at risk of different marine wildlife injuries, such as sea urchin, lionfish, scorpion-fish and stonefish.

The sea urchin is black, has numerous sharp, mobile spines (Haddad et al., 2009) and can be found in rocky areas or coral reef. The initial injury results in pain, erythema, burning, edema, and inflammation at the site of injury (Dahl et al., 2010).

The lionfish has 18 venomous spines located along the pelvic, dorsal, and anal fins. The primary complaint of the envenomed patient is pain at the site of the sting; occasionally radiation of pain up the affected extremity will occur. Systemic effects due to lionfish envenomation are rarely reported and are directly related to the amount of venom injected (Badiillo et al., 2012).

The scorpion fish is one of the most venomous fishes in the Atlantic Ocean. The venom apparatus of scorpion fish consist of 12 dorsal, 2 pelvic and 3 anal fin spines, causing intense pain, erythema, edema, nausea, vomiting, fever, agitation, diarrhea, and cardiovascular disorders (Carrizo et al., 2005).

The stonefish is considered the most venomous of fish. Each stonefish has 13 dorsal spines, and each spine is connected to a pair of venomous glands that are capable of producing a very potent but

* Corresponding author. Recanati School of Community Health Professions, Faculty of Health Sciences, Ben Gurion University of the Negev, P.O.B. 653 Beer-Sheva, Israel. Tel.: +972 8 6466222; +972 8 6477728; fax: +972 8 6477683.

E-mail address: grinstie@bgu.ac.il (O. Grinstein-Cohen).

heat-labile venom. The venom is myotoxic, neurotoxic, vasopermeable, and cardiotoxic (Tang et al., 2006).

Injuries from marine animals include a wide spectrum, from mild stings to severe bite wounds. Reports note that most of the injuries are mild, although some may be significant, resulting in death (Brown, 2005).

There are various treatments for marine wildlife injuries, although many have little scientific basis. Traditional therapies have included vinegar, fig juice, boiled cactus, heated stones, hot urine, ice, and hot water. The last is recommended by organizations such as the International Life Saving Federation and the British Marine Life Study Society (Atkinson et al., 2006). Hot water refers to a temperature of 42–45 °C for 30–90 minutes (Gweta et al., 2008). Physicians, who support hot water to relieve the pain, add pain medication as the basis of treatment (Halpern et al., 2002). Nurses are required to provide control of infection, tetanus prophylaxis, and (if required) supportive care for any systemic symptoms.

The most common symptom among patients presenting with marine wildlife injuries is severe pain involving the entire extremity (Lee et al., 2004), accompanied by anxiety (Auerbach, 1991; Haddad et al., 2003; Isbister, 2001). Usually, the visit to the emergency department causes stress and anxiety, due to both the emergency condition and to the crowded, noisy, fast-paced, and exposed nature of these departments (Gordon et al., 2010). A review of studies shows that the nursing staff do not pay sufficient attention to assessing and treating anxiety and pain (Puntillo et al., 2003; Stalnikowicz et al., 2005; Tsai et al., 2007), due to lack of awareness and overwork. From the patient's perspective, the main cause of anxiety and dissatisfaction is due to lack of sufficient guidance and information. Nurses, particularly emergency nurses, play an important role in providing quality care to patients. It is very important

to assess the level of pain and anxiety when a patient is admitted, and to provide complete nursing care, which leads to increased patient satisfaction.

The American Pain Society first invented the term “Pain as the 5th Vital Sign” to promote routine pain assessment, along with pulse, temperature, blood pressure, and respiration (Shugarman et al., 2010). Pain assessment is a very important part in triage evaluation. The intensity of pain, in all Israeli hospitals, including Yoseftal hospital in Eilat, is measured by visual analogue scale (VAS) (Fig. 1). The VAS is considered to give a reliable measure of an individual's self-assessed pain, and is useful for the decision regarding pain treatment in the evaluation of pain relief measures (Lewén et al., 2010) in the hospital and community setting in the western world. The scale ranges from: no pain rated as zero (0) to severe pain, rated as ten (10) (Lindberg and Enqstrom, 2011; Smeltzer and Bare, 2008). In acute pain management processes, drug therapy is only a part, while empathy and proper patient education will decrease pain level for patients (Guru and Dubinsky, 2000).

There are studies that demonstrate the impact of structured nursing guidance in improving patient care and outcome (De Jong et al., 2007; Jackson, 2010; Kleinbeck and Eells, 1997; Sjöling et al., 2003). However, no studies were found in the literature review on nursing care regarding injuries from marine animals, apart from one study on evolution of nursing knowledge for the care of the patient with Irukandji Syndrome, in Australia (Greenland et al., 2006). This study was designed to further investigate whether training nurses in the care of Red Sea marine wildlife injuries can reduce the pain level in the emergency department.

The aim of the study was to investigate the outcome of nursing care on pain levels compared to standard nursing care for patients seeking emergency care for a marine animal injury.

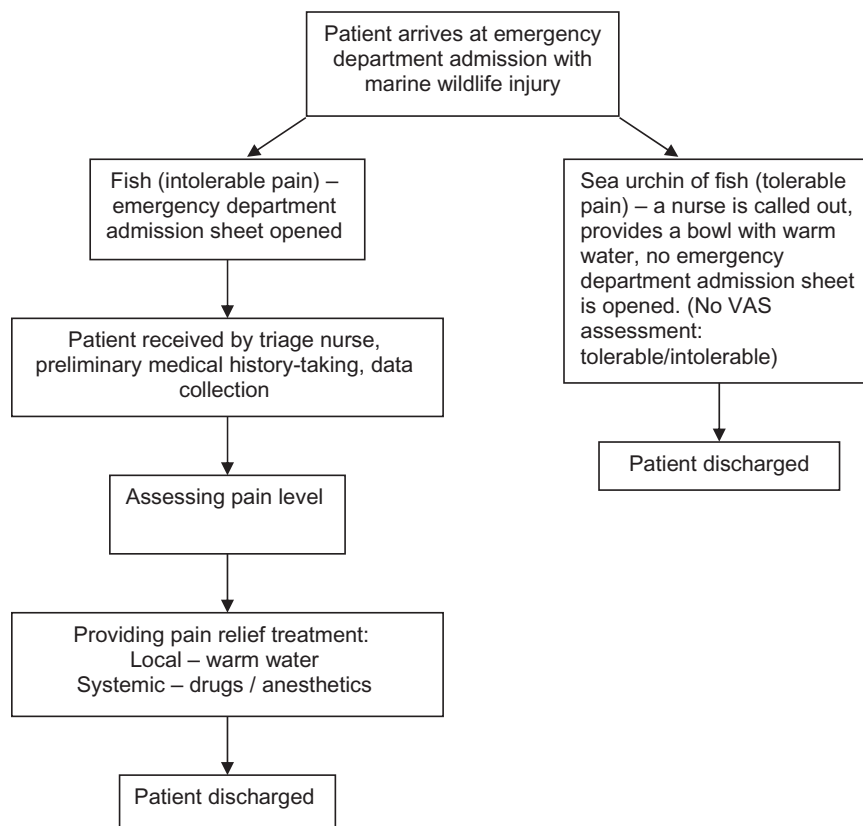


Fig. 1. Nursing intervention before the training.

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