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Health-Related Stigma, Social Support, Self-Efficacy and Self-Care Actions among Adults with Sickle Cell Disease in Oman

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Objectives: This study aimed to examine the associations between stigma, social support, self-efficacy and self-care actions among adult patients with sickle cell disease (SCD) in Oman. **Methods:** A cross-sectional, descriptive correlational design using standardised questionnaires about stigma, self-efficacy, social support and self-care actions was used. A stratified random sample of 264 adult Omanis with SCD was recruited from two tertiary hospitals in Muscat. Both descriptive statistics (mean \pm standard deviation, frequencies and percentages) and inferential statistics (independent t-test, the Mann-Whitney U test and Pearson correlation) were used to analyse the data. **Results:** Findings indicated that patients with SCD in Oman had health-related stigma with mean 28.1 ± 12.9 out of 66. However, the mean total scores for social support, self-efficacy and self-care actions were 4.8 ± 1.5 , 28.3 ± 7.5 and 27.3 ± 4.2 , respectively. There were significant negative relationships between social support, self-efficacy, self-care actions and stigma. Further, this study showed that the length of hospital stay was positively correlated with stigma, but not significantly correlated with social support, self-efficacy or self-care actions. Participants with a high level of education had significantly higher self-care action scores. **Conclusion:** Health-related stigma is a challenge for SCD patients. It has a detrimental impact on the health status of patients with SCD and on their families. Therefore, strategies for managing SCD and preventing complications are urgently needed. Understanding factors that affect stigma is essential when implementing effective strategies to improve the quality of care of individuals with SCD.

An Overview of Legal Aspects of Resuscitation and Do Not Resuscitate Orders Under Omani Law

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Resuscitation has become an integral part of the standard of care in modern healthcare practice over the last half a century. Yet, death, and hence decisions on resuscitation, remain a complex issue with certain dilemmas encountered in many cases. Likewise, healthcare has become a regulated discipline with more legislative mandates in healthcare practice. Resuscitation touches on a crucial religious, cultural and human values of life and death, and law has become more involved in its regulation. This presentation attempts to shed a light on aspects of resuscitation regulated by Omani law. It covers, from a legal perspective, three stages surrounding the death in relation to the practice of resuscitation. The first is the stage of end of life care and advanced decisions of resuscitation and do not resuscitate orders. The second stage is the practice of resuscitation at the time of death. Lastly, the third stage is the stage following the resuscitation and death of the patient. All these stages carry religious, social, ethical and legal values and concerns. Healthcare providers need to be aware of these values and concerns, not the least the legal framework that governs their practice in order to ensure safe and legitimate practice.

Use of Simulation in Team Based Learning to Enhance the Performance of Undergraduate Medical Students in Emergency Medicine Care at Sultan Qaboos University: Students' Perception.

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Objectives: Team-based learning (TBL) and simulation have been proven to be effective educational approaches. However, the impact of combining these methods as part of undergraduate emergency medicine education has not been reported before. This study assessed the use of simulation as a tool in TBL in emergency medicine education. It aimed to compare pre- and post-confidence level in knowledge of undergraduates in myocardial infarction and anaphylaxis as emergency medicine presentations using simulation-TBL methods at Sultan Qaboos University Hospital (SQUH), Muscat, Oman. It also evaluated students' satisfaction towards this method. **Methods:** This cross-sectional study used a convenience sample that included senior medical students who rotated through the Emergency Medicine Department at SQUH from April 2020 to March 2021. Pre- and post-confidence level in knowledge and students' satisfaction were evaluated using a validated self-developed Likert-scale questionnaire. Wilcoxon signed rank test was used to compare pre- and post-confidence level in knowledge and descriptive statistics were used to evaluate students' satisfaction. **Results:** A total of 54 students attended TBL and high-fidelity simulator sessions and completed the questionnaire. Results showed that 38.89% of students in acute coronary syndrome topic and 42.59% of students in anaphylaxis topic had a significant increase in their level of confidence. The highest increase in students' confidence was noticed in managing acute emergency situations. Agreement percentage of 86% towards the method was noted. Students were satisfied with this method's ability to link knowledge to practice and align with learning and availability of appropriate scenarios for their level of competence. **Conclusion:** Simulation combined with TBL is an effective educational method in enhancing students' confidence with a high level of students' satisfaction. It is recommended to implement this method in undergraduate emergency medicine education.

Overview of Assault Induced Trauma Presenting to a Trauma Centre in Oman

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Objectives: Assault induced trauma (AIT) is a public health concern that must be addressed and acknowledged. To the best of the authors' knowledge, in Oman, this issue has not been studied before. This study aimed to characterise cases of AIT presenting to Sultan Qaboos University Hospital (SQUH), Muscat, Oman. **Methods:** This is a retrospective descriptive study of patients presenting with AIT to the emergency department of SQUH from January 2007 to December 2018. Data obtained included incidence, patients' demographics, mode of assault, triaging, management and hospital stay. The data were collected using the hospital information system 'TrakCare' and analysed using Statistical Package for the Social Sciences. **Results:** The total number of cases of AIT identified was 268 cases and 239 fulfilled the study criteria. The highest incidence recorded was in 2018 accounting for 72 cases. The sample was predominantly composed of males at 82.4% and 65.3% of the total cases were Omani citizens. In addition, 66.9% of the total sample cases were between the age of 20 and 39. The most common mode of assault implicated was the use of bodily force (34.7%). Additionally, 18.4% were triaged as red cases. In terms of management, 84.5% of the cohort was treated non-surgically. No incidence of in-patient mortality was recorded. **Conclusion:** This is the first study that looked into AIT in Oman. Results of this study will aid in providing basis for future research and estimation of the magnitude of this problem in the community.

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Coagulopathy in Trauma: Causes and preventive implementations at Sultan Qaboos University Hospital

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Objectives: Trauma is the leading cause of death in people less than 40 years old worldwide. The trauma triad of death is composed of acidosis, hypothermia and coagulopathy. Coagulopathy is found in 24.5% of trauma patients, mainly with severe injury. Mechanisms of coagulopathy in trauma include: protein C activation, endothelial injury, coagulation factor deficiency, hyperfibrinolysis and many others. Appropriate management and resuscitation decrease mortality significantly. **Methods:** There are multiple markers used to detect coagulopathy in trauma. Viscoelastic methods (VEM) are used to measure the whole blood viscoelastic properties during clot formation. They provide information about clot initiation, strength and fibrinolysis. Based on these values, a goal-oriented management of coagulopathy can be achieved at Sultan Qaboos University Hospital (SQUH), Muscat, Oman, for trauma patients. There are two evidence devices available for VEM: thromboelastography (TEG) and rotational thromboelastometry (RoTEM). These devices will provide fast bedside results in SQUH's emergency department within 10 minutes compared to 45 minutes with the conventional test. **Results:** TEG measures the entire life cycle of a clot and it gives an estimation of clot strength. The values of TEG help guide the management of coagulopathy. Coagulopathy types that are discussed are factor deficiency, low platelet function, low fibrinogen, increased fibrinolysis, hyper-coagulation status and hyper-coagulation with primary fibrinolysis. **Conclusion:** Implementing the TEG and RoTEM devices in SQUH's emergency department will help manage coagulopathy in trauma by delivering the best option of treatment according to the patients need.

Hypoglycaemia in Emergency Medicine Department: Incidence, Epidemiological Profile, Aetiology and Mortality at Sultan Qaboos University Hospital.

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Objective: This study aimed to estimate the incidence of hypoglycaemia in patients admitted to the emergency department (ED) of Sultan Qaboos University Hospital (SQUH), Muscat, Oman, and to describe the epidemiological characteristics, aetiology, mortality and treatment options for hypoglycaemic patients. **Methods:** This is a cross sectional retrospective study on patients admitted with hypoglycaemia to ED at SQUH. Patients aged 15 years or more at the time of arrival to the ED with random blood glucose level of ≤ 3.9 mmol/L in the period of January 2010 to January 2017 are included in the study. **Results:** A total of 242 patients were admitted to the ED with hypoglycaemic episode. The incidence of hypoglycaemia increased, mainly from 2013 to 2016. The most common symptoms were abnormal heart rate (27%), followed by drowsiness (17.77%), gastrointestinal symptoms (14.88%), motor deficit (10.74%) and altered conscious status (10.33%). The most common aetiologies in diabetics were insulin use (76.2%), cardiovascular disease (71.2%), use of oral hypoglycaemic agents (26.6%) and infection/sepsis (12.4%). While in non-diabetics, cardiovascular diseases and infection/sepsis were the main causes with (38.2%) and (25.5%), respectively. The other causes in non-diabetics were liver disease (14.5%), malignancies (10.9%) and drugs/toxins (9.1%). No mortality was reported due to hypoglycaemia. The most common intervention for hypoglycaemia was intravenous dextrose (81.78%). **Conclusion:** Overall, the incidence of hypoglycaemia at the ED of SQUH increased during the study period. Aetiology of hypoglycaemia was linked mainly with insulin use in diabetics and cardiovascular disease in non-diabetics. The most used treatment was intravenous dextrose.

Cardio Pulmonary Respiratory Refresher Role in Retaining Psychomotor Skills

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Objectives: This study aimed to determine whether the six months cardiopulmonary resuscitation (CPR) refresher training would maintain the psychomotor skills of high-quality CPR. **Methods:** This prospective single-centre non-blinded randomised controlled study was conducted at Sultan Qaboos University Hospital, Oman, from February 2018 to August 2020. All enrolled participants were assessed for their baseline knowledge and skills of CPR including chest compression, chest recoil, chest release, ventilation

and interruption time. They received training for CPR at the same time. Six months later, participants were divided randomly into intervention group, who received a refresher training of CPR, and control group who received no training. Performance was assessed for both groups after 12 months, from the date of enrolment. A $P < 0.050$ was considered statistically significant. **Results:** A total of 38 healthcare providers, 19 in each group, were enrolled in this study. Results showed comparable findings in terms of knowledge. One year post-enrolment, the intervention group showed an improvement in their performance in terms of ventilation ($P = 0.028$), interruption time ($P = 0.020$) and overall performance ($P = 0.010$). **Conclusion:** A short-time refresher CPR training program six months after the initial training can help trainees retain CPR skills for up to one year.

Validation of Heart Score in a Tertiary Care Hospital in Oman

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Objectives: Accurate risk stratification by emergency physicians for patients presenting to the Emergency Department (ED) with chest pain is critical. The HEART score predicts the incidence of major adverse cardiac events (MACE) within six weeks of patient's presentation to ED with chest pain. In addition, the HEART score is an accurate and fast prognostic tool. This study aimed to conduct an external prospective validation study of the HEART score among ED patients. **Methods:** This prospective cross-sectional study included all patients who presented to the ED of Royal Hospital, Oman, with chest pain from May to November 2018. Data were collected from the AlShifa 3+ electronic health system and data sheets filled by the treating physicians. The primary outcome was a composite of all-cause mortality, myocardial infarction or unscheduled coronary revascularisation at six weeks of presenting to ED. **Results:** This study enrolled 300 patients but 50 patients were excluded due to missing data. Among the 250 patients, 56 (22.4%) patients had MACE within six weeks. The 250 patients were categorised based on HEART score as low risk ($n = 122$, 48.8%), followed by intermediate ($n = 91$, 36.4%) and high risk ($n = 37$, 14.8%). Seven patients of Low risk had MACE. So, 5.7 % of Low risk had MACE. The area under the curve was 0.775. **Conclusion:** The results of this external validation study show poor prognostic accuracy of the HEART score for six-week MACE.

Epidemiology of Spinal Fractures due to Motor Vehicle Collisions at a Tertiary Care Hospital in Oman

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Objectives: Spinal fractures are one of the injuries that are potentially disabling. The leading cause of these fractures is motor vehicle collisions (MVCs) worldwide. However, there is a lack of data regarding the epidemiology of spinal fractures in Oman. This study aimed to determine the incidence of spinal fractures and to study the pattern of these injuries in trauma patients due to MVCs presented at Sultan Qaboos University Hospital (SQUH), Oman. **Methods:** This retrospective observational study included all the trauma patients due to MVCs who presented at SQUH between January and June 2017. The baseline demographic, clinical and radiological data of the patients were analysed. **Results:** A total of 815 trauma patients were identified during the study period. The incidence of spinal fractures was 5.1% ($n = 42$). Of these, 78.6% were males and 71.4% were from the younger age group (20–39 years). The most common anatomical region of fractures were in the lumbar region (28.6%), mainly spinal levels L1 and L2 (53.1%). Of the patients, 7.1% sustained neurological deficits and 9.5% required surgical interventions. Drivers sustained more spinal fractures (45.2%) compared to second seat passengers (14.3%). In addition, the restrained group sustained more cervical fractures (50%) and the non-restrained group sustained more thoracic fractures (50%). **Conclusion:** This study provides baseline spine trauma epidemiological data at SQUH. Future studies and collaborations between trauma centres in Oman can guide efficient resource allocations for the management of spine trauma.