

Investigation of Cases of Tetanus in a Population of Iranian Goats and Sheep

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Abstract

Background and purpose: Tetanus is a life-threatening toxic infection in domestic animals caused by the neurotoxin of *Clostridium tetani* (*C. tetani*). Compared to cattle, sheep and goats are more susceptible to this disease. The present study was conducted to report and investigate cases of tetanus and increase prognosi about the manner and conditions of this disease.

Materials and methods: In total, 50 cases of tetanus disease in sheep (20) and goats (30) populations were investigated in the regions of Iran. Clinical examinations were performed for all cases, and clinical symptoms were recorded. Then, sampling was done for bacteriology and isolation of the disease agent.

Findings: Clinical examination results showed that limb stiffness, including spastic, involuntary, and protracted muscle contractions, was prevalent in all cases. The legs of affected sheep and goats were contracted towards the caudal side. The presence of *C. tetani* bacilli was confirmed in ۳۸ cases through bacteriological analysis and culture.

Conclusions and suggestions: Appropriate preventive measures and proper management can help reduce the incidence of tetanus. Recently, despite the increase in cases, less attention has been paid to this disease. The current study can be considered in developing a prognosis for small ruminant tetanus disease. In Iran, Tetanus toxoid is not present in common Clostridial vaccines used for prevention in sheep and goats. Therefore, adding tetanus toxoid to Clostridial vaccines and educating breeders is recommended.

Keywords: Tetanus, Small Ruminant, Goat, Sheep, Tetanus Vaccine

The effect of staff education on their performance and the indicators of the central sterilization department

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Abstract

Background and Objective: Sterilization is one of the most important processes in the hospitals, where the safety of the patients depends on the quality of the central sterile department staff performance. In this study, the effect of the training course for the staff of the central sterile department in improving their performance was investigated.

Materials and Methods: This interventional study was conducted in 11 hospitals affiliated with the Tehran University of Medical Sciences. The central sterile department staff were trained for 100 theoretical hours and 40 practical hours. The maximum score obtained in this questionnaire was 80, and the minimum score of 60 was considered as an acceptable score. The project managers visited the trained centers on two occasions. The tool used in the visits was a checklist assess the structural and functional area of the hospital, with the maximum score of 80.

Results: In total, 156 people were trained and all of them passed the test. The score obtained in all hospitals increased after training and none of the centers obtained a score lower than 54, and the highest score was 73.1. Also, the indicators of structural and direct and indirect functional areas increased in all centers.

Conclusion: The training of central sterilization department staff is effective in empowering them. Therefore, considering the importance of the central sterilization activity in patient safety and hospital costs, training these employees needs to be as one of the priorities of every medical center.

Keywords: Central Sterilization Department, Hospital, Patient Safety, Education, Infection

The potential impact of probiotics on urinary tract infections

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Abstract

Urinary tract infections (UTIs) are among the most prevalent infections affecting humans, especially women. The main bacterium that causes most urinary tract infections, uropathogenic *Escherichia coli* (UPEC), can adhere to the urinary tract's epithelial cells and lead to biofilm formation. Bacterial biofilms play a critical role in the persistence and recurrence of infections, which results in multiple resistance to different antimicrobial agents. Although long-term antibiotic consumption is considered an effective treatment option, it is no longer successful due to development of bacterial resistance to different classes of antibiotics. Moreover, there is no secure preventive strategy to control UTIs. In recent years, the potential role of probiotics as promising alternatives for their use in the prophylaxis and treatment of UTIs have been investigated extensively. Probiotics prevent the spread of UTIs by restoring and maintaining the microbiota, competitively eliminating urinary pathogens, maintaining the proper pH of the bladder, and producing antibacterial substances. Furthermore, recent studies have shown that probiotics and their metabolites can prevent the attachment of bacteria and consequently inhibit the biofilm formation among urinary tract. Probiotics can change the expression of genes involved in adhesion, quorum sensing, and virulence of bacterial pathogens; and also prevent pathogen adherence and biofilm formation by formation non-pathogenic biofilms. Hence, *Lactobacillus* and *Bifidobacterium* species have been recognized as the most effective group of probiotics for prophylaxis and treatment of UTIs. Therefore, future studies should focus on the finding of effective strains of probiotic or their appropriate formulations to prevent and treat UTIs, investigation of the impact of the gut microbiota on urinary tract health, and developing new strategies to increase the viability and delivery of the probiotics in the target tissue. In the current study, the important mechanisms of probiotics in the prevention and treatment of urinary tract infections have been discussed.

Keywords: Urinary tract infection, biofilm, probiotics, microbiota, *Lactobacillus*, *Bifidobacterium*

Predicting resilience based on emotion regulation and mindfulness in nurses during the covid 19 virus epidemic

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Abstract

Background and purpose: The spread of the corona virus and the physical and psychological consequences related to it is one of the most important human social events in the 21st century. Because of their job, communication with patients with covid-19, nurses are more at risk of infection than anyone else in this era, and in addition to that, long shifts and observing their deaths have exposed them to severe psychological consequences. The aim of this study was to predict resilience based on emotion regulation and mindfulness in nurses during the Covid-19 pandemic.

Method: The research method is correlation type. The statistical population of the research included all the nurses working in Shohada Kargar Hospital in Yazd city in 2021, who were selected by available sampling method of 200 people. Research tools include resilience questionnaire (Connor and Davidson, 2003), emotion regulation (Gratz and Romer, 2004), mindfulness (Brown and Ryan, 2003). They were analyzed at a significance level of 0.05.

Findings: The results showed that predicting resilience based on emotion regulation and mindfulness in nurses during the covid-19 virus epidemic is significant ($P < 0.001$).

Conclusion: Because resilience leads to positive adaptation in response to adverse conditions and increases the quality of life. According to the research results, mindfulness training and emotional regulation can be used to increase nurses' resilience in order to improve their health and improve the quality of nursing care.

Keywords: Resilience, Emotion regulation, Mindfulness

Therapeutic strategies to accelerate wound healing

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Abstract

Wound healing is a complex process and known as one of the most important challenges in medicine, which imposes a significant financial burdens on patients and healthcare systems. It has been estimated that chronic wounds as a whole cost the medical system over US\$12 billion per year. Therefore, the development of innovative therapeutic strategies for skin wound healing is very important. Over the years, different conventional therapeutic strategies such as debridement, skin grafting, pharmacological agents, topical formulations, wound dressings, and bioengineered skin substitutes, have been used extensively as the safe and effective methods for wound therapy. Moreover, in recent years advanced biomedical technologies, including nanomaterial-based therapies, stem cell applications, 3D bioprinting, platelet-rich plasma (PRP), microRNAs, and hyperbaric oxygen therapy, have been utilized to promote wound healing and restore normal skin function. In this study, modern and up-to-date available therapeutic strategies for healing and management of chronic wounds have been investigated

Key words: skin, acute wound, chronic wound, conventional methods of wound treatment, innovative methods of wound treatment