UNDER AUSPICES OF

PROF. AYMAN ASHOUR
MINISTER OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

PROF. NASSER ELGIZAWY
PRESIDENT OF BENHA UNIVERSITY

PROF. TAMER SAMIR
VICE PRESIDENT FOR EDUCATION AND STUDENT AFFAIRS

ORGANIZED BY

BJAS
BENHA JOURNAL OF APPLIED SCIENCES
مجلة بنها للعلوم التطبيقية

3rd ANNUAL CONFERENCE OF POST GRADUATE STUDIES FOR APPLIED SCIENCE

المؤتمر السنوي الثالث للدراسات العليا
للعلوم التطبيقيـــة بجـــامعة بنهـــا

Conference Abstract Book

2024 Benha University
PGASC
3rd Annual Conference of Post Graduate Studies for Applied Science
المؤتمر السنوي الثالث للدراسات العليا
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22-23 MAY 2024

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About Conference:

3rd Annual Conference of Post Graduate Studies for Applied Science - Benha University.The annual conference for graduate studies in the field of applied sciences, which is organized annually by the Post Graduate Studies and Research Sector at Benha University with the aim of capacities building of students and young researchers in presenting and discussing research papers or scientific articles in the various research areas of applied sciences.

Conference Objectives:

1) Opportunities for networking between Benha University graduate students and other universities.
2) Deepening the scientific research methodology for postgraduate students.
3) Providing an environment for students to present their scientific research experiences in their theses.
4) Giving the opportunity for postgraduate students to participate in the exhibitions of ideas.
5) Achieving the university's objectives in supporting students' research projects.

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President word

Prof. Nasser El-Gizawy

The new competitive conditions resulting from the knowledge economy and the challenges of the fourth and fifth industrial revolution make it imperative that universities put in place new policies that promote innovative capacity-building and innovation. The development tools are used to connect universities with the industrial sector as an effective step towards achieving one of the State's objectives in the Science, Technology, and Innovation Strategy 2030, namely, "to create a conducive and supportive environment for science, technology and innovation", to encourage the application of scientific research outputs and to deepen local industrialization.

In view of the Egyptian universities distinction in a number of scientific disciplines (engineering and technological sciences, physical sciences, life sciences, clinical and health sciences) according to the British Times rating of higher education institutions, Benha University is currently aiming to serve as a leading model for Egyptian universities in education, scientific research and undergraduate and community life. The university is encouraging innovators to contribute to the community, and to turn innovative ideas and inventions into economically valuable products, raising the university to a top regional and global level of innovation.

Therefore, the university is seeking to invest in knowledge and transform third-generation universities to harness knowledge to build a positive work environment and culture that supports innovation and continuous development in the service of development and the national economy, and to apply systems and mechanisms that promote the participation of government institutions and the private sector in the application of innovation efforts and participation in achieving the strategic goals of the state in critical areas. This will lead to achieving an active and sustainable partnership between the university and the public and private sectors, contributing to development, and helping to support new projects based on the generation of ideas and creativity.

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Conference Coordinator word

Vice Dean for Post Graduate Studies and Research
Faculty of Medicine

Prof. Hesham Rashid

In the beginning, I would like to thank His Excellency the President Benha University Prof. Nasser Al-Gizawy for their confidence to participate in organizing the 3rd Annual Conference of Post Graduate Studies for Applied Science Benha University, which aims to bring together young researchers at the University and abroad under the slogan "Building the Capabilities of Young Researchers"

The conference, which lasts for two consecutive days, is structured around four main themes: Medical, Basic Science, Engineering Sciences, Applied Biosciences, and the best research will be presented.

My sincere thanks and appreciation to my colleagues in the organizing committee of the conference, and my wishes to graduate students for a distinguished scientific conference to realize our aspirations in distinguished applied scientific research beneficial to our society and our beloved Egypt.

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Under Auspices of:

Prof. Ayman Ashour
Minister of Higher Education and Scientific Research

Prof. Dr. Nasser ElGizawy
President of Benha University
(Conference President)

Prof. Dr. Mohamed H. Refaat
(Associate Editor Benha Journal of Applied Sciences)

Prof. Dr. Hesham Rashid
(Conference Coordinator)

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(Conference Secretary General)

Conference Committees:

Scientific Committee

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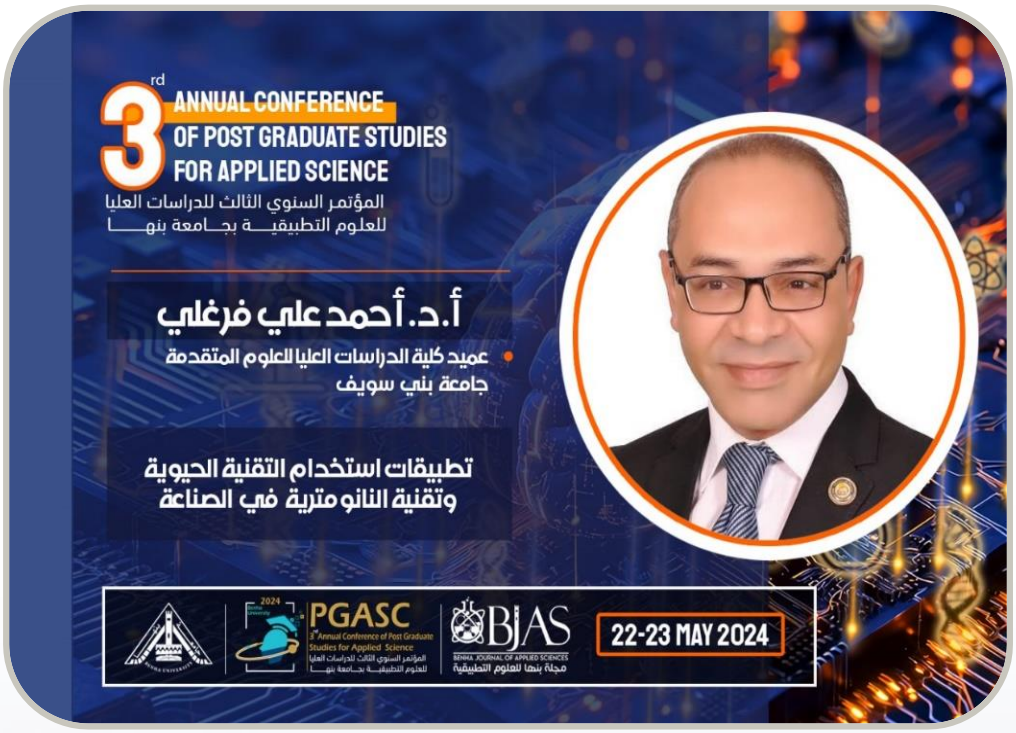
Plenary Session

Keynote Speakers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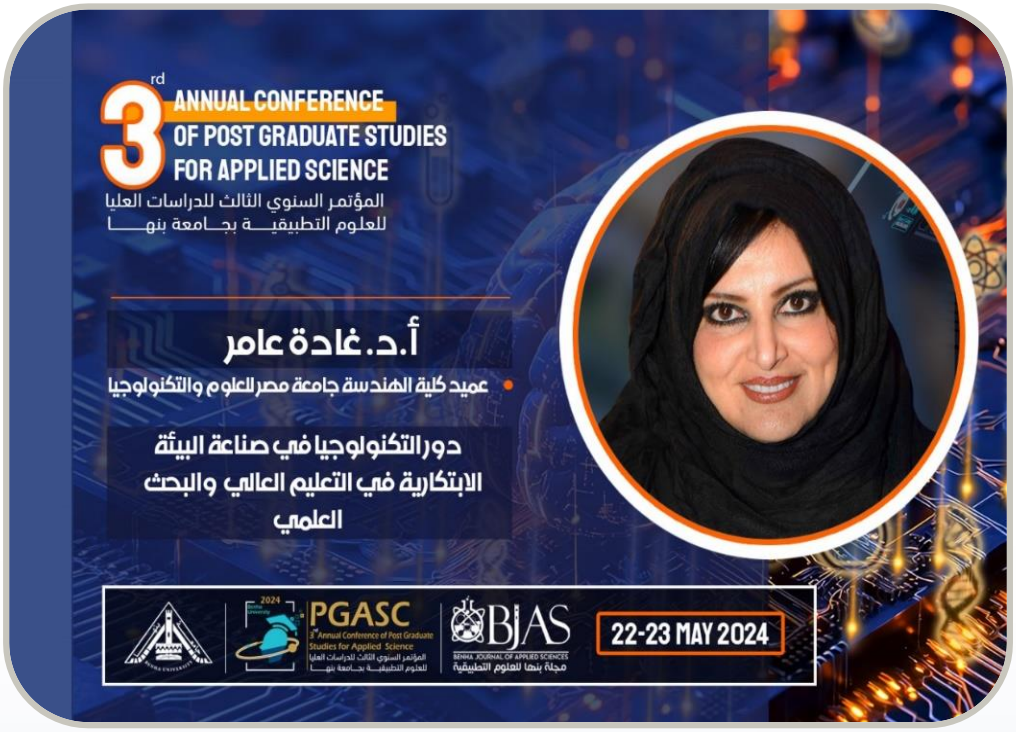
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دور التكنولوجيا في صناعة البيئة الابتكارية في التعليم العالي والبحث العلمي
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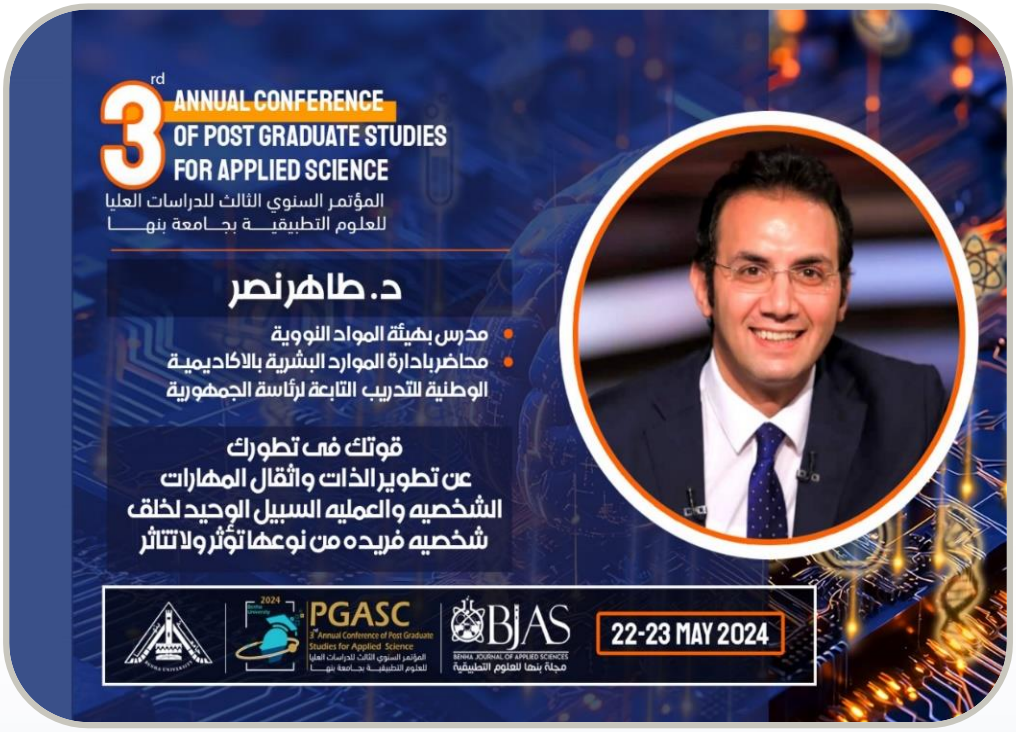
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د. طاهر نصر
مدرس بهيئة المواد النووية
محاضر بادارة الموارد البشرية بالاكاديمية الوطنية للتدريب التابعة لرئاسة الجمهورية
قوتك فى تطورك
عن تطوير الذات واثقال المهارات
الشخصيه والعمليه السبيل الوحيد لخلق
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Scientific Sessions

Topics of

Health & Clinical Science

I (Medicine)

1. Orthopedic Surgery and General Surgery

1. Clinical Evaluation of Changes in Ocular Surface Integrity after Upper Eye Lid Entropion Surgery

Ghada R. Hassan, Ahmed E. Daifalla and Husam M. Faramawi

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Abstract:

Background: Entropion is a common misalignment of eyelids where the border of the eyelid turns inward or inverts. It is more likely to develop in an older person. Trivially more people experience bilateral sickness than unilateral. Since women typically have smaller tarsal plates than men, it is believed that entropion occurs more commonly in women. Aim and objectives: To assess the impact of entropion operation on corneal health by evaluating the condition of the surface epithelium, tear film stability & visual acuity. Patients & methods: This cohort prospective trial was performed on 11 individuals (20 eyes) who underwent upper eye lid entropion surgery in the Ophthalmology Department at Benha University Hospitals. Results: There was a highly significant (p-value < 0.001) decreased percentage of positive fluorescein after surgery (1 patient, 5%) when compared with fluorescein before surgery (20 patients, 100%). Also, there was a highly statistically significant (p-value < 0.001) increased tear break up time (TBUT) after surgery {mean = 7.85 ± 2.4, median = 7 (6.25 – 8)} when compared with TBUT before surgery {mean = 5.0 ± 1.4, median = 5 (4 – 6.75)}.Conclusion: Our study demonstrated a noticeable enhancement in ocular surface integrity, including decreased corneal irritation, alleviated symptoms of discomfort, and improved tear film stability after the entropion repair procedure. These outcomes indicate a positive effect on the overall health and stability of the eye's surface subsequent to surgical intervention for upper eyelid entropion.

Keywords: Entropion, Ocular surface integrity, Tear film stability

2. Comparative Study of Combined Pars Plana Vitrectomy-Scleral Buckle versus Pars Plana Vitrectomy in Cases of Inferior Retinal Break with Proliferative Vitreoretinopathy

Ehab M. Saad, Hamdy A. Elgazzar, Sherif A. Dabour, Mohamed A. Yousef and Ahmed A. Tabl

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Abstract:

Background: The Researchers have compared the safety and effectiveness of pars plana vitrectomy with scleral buckle (PPV-SB) to pars plana vitrectomy (PPV) without scleral buckle, and the use of scleral buckle is only a matter of discussion among surgeons when it comes to complex retinal detachment surgery. In instances with inferior retinal break complicated with Proliferative Vitreoretinopathy, this study aimed to compare the surgical outcomes of combination PPV-SB versus PPV alone using optical coherence tomography (PVR). We used a prospective, randomised controlled trial design to examine the outcomes of surgical repair of retinal detachment in 58 eyes that had an inferior break and posterior vitreous recession (PVR) (RD). Each patient was randomly assigned to one of two groups: Treatment in Group A included both PPV and SB. Only PPV was performed on Group B. The results showed that in group A, there were no notable differences between the two groups in terms of age, sex, laterality, axial length < 26mm, intraocular pressure (IOP) before surgery, IOP three months later, lens status before surgery, macula status before surgery, and preoperative posterior vitreous refraction grading. Individuals in group B who had a successful single surgery had axial lengths that were noticeably greater than 26mm. There were no notable changes between the groups in terms of age, sex, laterality, intraocular pressure (IOP) before surgery, IOP three months after surgery, lens status before surgery, macula status before surgery, or preoperative visual acuity (PVR) grade. Conclusion: For patients with inferior breaks and PVR, restoring retinal detachment can be accomplished with either PPV alone or PPV combined with SB. Both surgical techniques are valid and have comparable outcomes.

Keywords: Combined Pars Plana Vitrectomy-Scleral Buckle; Inferior Retinal Break; Pars Plana Vitrectomy; Proliferative Vitreoretinopathy.

3. Comparative Study Between the Conventional Modified Radical Mastectomy and Modified Radical Mastectomy with Quilting Technique ao Axillary Skin Flap in Reduction of Postoperative Seroma in Surgical Management of Breast Cancer

Ahmed F. Abouelsoued, El-sayed A. Abd El-mabood, Mohammed T. Yones and Mohamed A. waly

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Abstract:

Seroma is the most common complication following breast surgeries especially modified radical mastectomy which cause many issues to the patient such impair healing of the wound and may be infected , in an attempt to reduce seroma formation we worked on reducing the dead space to decrease the amount of seroma formation by quilting technique to the axillary skin flaps to the serratus anterior muscle following modified radical mastectomy as treatment of breast cancer.

Keywords: Seroma, Dead Space and Quilting Technique

2. Dermatology ,Venereology and Andrology:

4. Intralesional Treatment of Plantar Warts

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Abstract:

Objectives: This purpose of this review is to assess the safety and effectiveness of intralesional treatments for plantar warts, including immunotherapies and drugs that modulate the immune system or have anti-viral properties. Background: The lack of a therapy that works for everyone makes plantar wart maintenance difficult. Emerging as a viable option, intralesional treatments provide distinct benefits when dealing with many or resistant lesions. In order to cure plantar warts caused by the human papillomavirus, this review delves into the various intralesional medicines and how they work (HPV). Locations of the Data Sets: Research on intralesional therapies for plantar warts up to the year 2023 was scoured via a variety of Medline databases, including PubMed. Research on the effectiveness, side effects, and action mechanisms of various intralesional medicines that met certain inclusion criteria were taken into consideration for this review. To be considered for inclusion in the study, research had to be written and published in English, undergo peer review, and give light on the processes and effectiveness of intralesional therapies for plantar warts. A comprehensive examination of the study's quality, including its ethical clearance, eligibility requirements, controls, and outcome assessment tools, was required for data extraction. Conclusions: There is a wide range of intralesional therapies available for plantar warts, each with its own set of advantages and disadvantages in terms of safety and effectiveness. This study provides an overview of the current state of knowledge about the treatment of plantar warts caused by HPV, including the methods and results of immunotherapies, mycobacterial agents, Candida antigen, and other intralesional agents.

Keywords: Topics covered include plantar warts, intralesional injections, mycobacteria, candida, and HPV (HPV).

5. Study of The Possible Role of MicroRNA 106b in Psoriasis Vulgaris" for publication in Benha Journal of Applied Sciences

Nancy Wadie Mikhael[1], Mahmoud Mohamed Tawfick[2], Aliaa Elhusseiny Mohamed[1], Heba Elsayed Abd Elraheem[1]

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Abstract:

Objectives: Investigating what part does MicroRNA106b play in the illness progression of psoriatic patients? Background: Although microRNA 106b has been extensively studied in autoimmune illnesses, its involvement in psoriasis patients has been underexplored. Data Sources: Studies that investigated the potential function of MicroRNA106b in psoriasis patients up to the year 2022 were located by searching and examining the Medline databases (Pub Med and Medscape). Choosing the Right Study: The inclusion of all research was determined by separate evaluations. They were considered for inclusion if they met the following requirements: First published in English. 2. Publications that have undergone a peer review process before being published. Provide an explanation for the potential relationship between psoriasis vulgaris and serum MicroRNA106b levels. When extracting data, studies were discarded if they did not meet the inclusion criteria. Ethical permission, clear eligibility criteria, suitable controls, sufficient information, and well-defined evaluation measures were all variables in determining the study's quality. We used a data collecting form to independently extract information relevant to our research results from all qualifying studies. Patients with psoriasis vulgaris had a reduced level of serum microRNA 106b, according to the conclusions. Psoriasis vulgaris and microRNA 106b are the main terms here.

Keywords: Psoriasis, Vulgaris, MicroRNA106b.

6. Serum and Tissue Marker in Keloids and Hyper Trophic Scars: A Comprehensive Review

Asmaa. O. Abdeltwab[1], Neveen. E. Sorour[1], Naglaa. I. Azab[2] and Doaa. M. El-Habak[1]

[1]Dermatology, Venereology and Andrology Dept, Faculty of Medicine, Benha University,
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Abstract:

Background: The irregularities in the healing process may result in hypertrophic scars and keloids, despite the fact that the goal of wound healing is to restore skin integrity with minimum scarring. Patients' quality of life is negatively impacted by these scars, which are defined by abnormal fibroblast activity and excessive collagen synthesis. The purpose of this extensive study is to investigate prolargin's function in keloids and hypertrophic scars, with a particular emphasis on its relationships with variables that contribute to scar formation and its possible use as a biomarker and therapeutic target. Conclusions: Essential for the formation of hypertrophic scars and keloids, prolargin has a substantial effect on collagen synthesis and fibroblast activity. It seems to be an important regulator of scarring based on its interactions with the immune system and the extracellular matrix. There are encouraging treatment options for reducing pathological scarring that include prolargin, due to its ability to inhibit pathways in the complement system and improve skin layer adhesion. To find out how prolargin contributes to scar development and how to treat them effectively, more research is required.

Keywords: Relevant Terms: Hypertrophic Scars, Keloids, Prolargin, Tissue Expression, and Serum Level.

7. Androgenetic alopecia: An overview

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Abstract:

Androgenetic alopecia (AGA) is the most prevalent type of hair loss in both men and women. As the name indicates, the role of androgens and genetic vulnerability predisposes to pattern hair loss. AGA is characterized by gradual hair follicular miniaturization, brought on by the actions of androgens on genetically sensitive hair follicles' epithelial cells in androgen-dependent regions. AGA in women is called female pattern hair loss (FPHL), which is characterized by a decrease in hair density in the central part of the scalp while the frontal hairline is typically well preserved. While histologically identical, male, and female pattern hair loss are separate clinical entities. There are many known and unknown factors that influence the development of AGA, its exact pathogenesis is unclear precisely. This article discusses the current understanding of the etiopathogenesis of AGA, clinical features diagnostic tests available, and its treatment options such as various topical agents, systemic agents, and procedural interventions.

Keywords: Androgenetic alopecia, Female pattern hair loss, Male pattern hair loss, Minoxidil, Androgen receptors

8. Evaluation of Serum Endocan Level and Erectile Functions in Patients with Psoriasis

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Abstract:

Background: In psoriasis patients, circulating endocan is associated with disease severity and cardiovascular risk. Once again, endocan levels were correlated with inflammatory markers; individuals with psoriasis had greater amounts than controls. Elevated endocan levels may indicate inflammatory and endothelial factors contributing to erectile dysfunction pathophysiology (ED). As a new diagnostic indicator for the degree of erectile dysfunction, endocan could be helpful. The purpose of this review is to examine erectile dysfunction, serum endocan levels, psoriasis epidemiology, and pathophysiology in great detail. The endothelial and inflammatory components of the aetiology of both psoriasis and erectile dysfunction may be represented by increased endocan levels, according to the conclusions. One possible use for endocan is as a diagnostic marker for erectile dysfunction and psoriasis.

Keywords: Erectile Functions, Endocan, and Psoriasis are the main terms here.

9. Assessment of Serum Procalcitonin Level and Neutrophil/ Lymphocyte Ratio in Patients with Lichen Planus

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Abstract:

Background: Lichen It is believed that dyslipidemia and diabetes mellitus have a tight relationship with the aetiology of papulosquamous chronic plaques, or lichen planus (LP). The goal of this study is to examine all aspects of LP patients' blood procalcitonin levels and neutrophil/lymphocyte ratios, including their epidemiology, pathophysiology, and clinical features. Conclusions: The neutrophil/lymphocyte ratio and serum procalcitonin levels show potential as diagnostic indicators for LP. Their strong associations with illness severity point to their possible use in measuring the severity and scope of this ailment. Topics covered include lichen planus, serum procalcitonin, and neutrophil to lymphocyte ratio.

Keywords: Lichen Planus; Neutrophil /Lymphocyte Ratio; Serum Procalcitonin.

10. Assessment of Leptin Level in Serum of Patients with Seborrheic Dermatitis

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Abstract:

Seborrheic The medical field often encounters dermatitis (SD), which goes by a few other names including dandruff, seborrheic eczema, and sebo psoriasis. There is growing interest in the potential link between metabolic syndrome (MetS) and a number of dermatological conditions, such as SD. Obesity, for example, is linked to elevated leptin levels and resistance to its effects, implying a nuanced relationship between leptin and skin health. Aiming to determine if there is a correlation between serum leptin levels and metabolic syndrome in individuals with SD is the primary goal of this review. Conclusions: compared to healthy controls, individuals with seborrheic dermatitis had much higher blood leptin levels, suggesting that leptin may play a role in the disease's pathophysiology. Serum leptin levels, in particular, seemed to be a biomarker for illness severity and to correlate with disease severity. Compared to healthy controls, individuals with seborrheic dermatitis had much higher blood leptin levels, suggesting that leptin may play a role in the disease's pathophysiology. Serum leptin levels, in particular, seemed to be a biomarker for illness severity and to correlate with disease severity.

Keywords: Seborrheic dermatitis, Leptin, Metabolic syndrome.

11. Pathogenesis of Acne Vulgaris in Adolescence

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Abstract:

Objectives: Describe the pathophysiology of acne vulgaris and talk about how androgens contribute to the onset of the condition throughout puberty. Background: Acne is a skin ailment that often affects children and teenagers. It seems that the condition is triggered by an increase in the amounts of circulating androgens that originate from the adrenal glands and the testes. Research Methods: We scoured the Medline databases (Pub Med and Medscape) for research that elucidate the pathophysiology of acne vulgaris and address the part played by androgens in the onset of the condition in adolescents up to the year 2023. Research Prioritization: The inclusion of all research was determined by separate evaluations. Inclusion was contingent upon them meeting the following requirements: 1. Presented in an English language format. 2. Publicated in publications that undergo a rigorous peer review process. 3. Explain the process by which acne vulgaris develops and talk about how androgens play a part in this adolescent skin condition. Data Extraction: Studies were omitted from consideration if they failed to meet the inclusion criteria. The study's quality was evaluated based on a number of aspects, such as the following: the availability of sufficient information; the clarity of evaluation criteria; and the acquisition of ethical permission. For our concerned research outcomes, data were independently extracted from all qualifying studies utilizing a data collecting form. Conclusions: Acne is a problem that mostly affects children and teenagers, and it seems that the illness is triggered by elevated amounts of circulating androgens that originate from the adrenal glands and the testicles. Acne pathogenesis involves a series of events that occur in a relatively consecutive order: retained hyperkeratosis, hyperplasia of the sebaceous glands and increased sebum production, follicle colonization by Propionibacterium acnes, and inflammation around the follicles.

Keywords: Acne vulgaris.

12. Association between Obesity and Acne Vulgaris Development Sciences

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Abstract:

Background: Numerous acne vulgaris, a prevalent condition affecting the skin, has been associated with several circumstances. The complex and multi-faceted pathophysiology of acne is greatly impacted by the overproduction of sebum and its specific makeup. Obesity is related with insulin resistance and peripheral hyperandrogenism, both of which may contribute to increased sebum production and the development of severe acne. One common way to measure excess fat and muscle is the body mass index (BMI). A correlation between body mass index and acne has been postulated for some time, and new studies have addressed this issue, albeit they have produced contradictory results. Goals: Reading this review will help you understand how weight and acne are related. In conclusion, being overweight increases the risk of developing acne vulgaris. Higher body mass indexes were associated with an increased prevalence of acne vulgaris.

Keywords: Acne vulgaris, body mass index, serum lipids, and relevant.

13. Study of Clinical Characteristics and Aetiological Factors of Mask-Induced Acne

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Abstract:

Background: Mask induced acne "Maskne" is a term that emerged after COVID pandemic in 2020. It was obligatory to health care workers and non-health care workers to wear protective masks for long periods of time. Aim of the study: the study aim was to determine clinical characteristics and possible aetiological factors of mask-induced acne. Patients and methods: A cross sectional observational study was carried out on 30 patients having Maskne and 10 age and sex matched healthy control conducted on December 2021 to June 2022. All patients were subjected to full history taking, clinical examination, and samples were taken for microbiological examination. Results: Most patients (63.3%) had mild acne. No significant association was found between acne severity score and the type, color, and weight of masks ($p>0.05$). Study results showed more growths of bacteria isolated from the masked area than non-masked areas and more than that found in control group. Conclusion: It was found that prolonged mask use can lead to the new onset of acne and worsening of the previous acne.

Keywords: Mask-induced acne; Clinical characteristics; Aetiological factors .

3.Radiology; Chest Diseases; Critical Care Medicine:

14. Klotho G-395A Gene Polymorphism: Impact on Progression of End-Stage Renal Disease and Development of Cardiovascular Complications in Children on Dialysis

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Abstract:

Background*:* at In recent years, many indicators have been identified that may predict the likelihood of chronic kidney disease in children who already have certain risk factors. But it's still not easy to accurately measure danger. Goal: This research set out to examine the relationship between cardiovascular problems in juvenile patients on hemodialysis for end-stage renal illness and klotho gene polymorphisms (G-395A). Procedures and Materials: Fifty children participated in the case control study; twenty were on maintenance hemodialysis for end-stage renal disease, ten were on conservative therapy for chronic kidney disease, and ten were healthy controls. All forty kids were genotyped for Klotho G-395A and evaluated for clinical and echographic variants. Findings: Compared to control children, children with chronic kidney disease (both conservative and hemodialysis patients) had much higher frequencies of the GA + AA genotype. The frequencies of the G and A alleles were also significantly different. When looking at the two groups side by side, we can see that the GG and GA+AA frequencies were significantly different between the control and hemodialysis groups, but not between the conservative and hemodialysis groups. On the other hand, the AA genotype frequency was significantly different between the conservative and control groups, as well as between the hemodialysis and control groups. In conclusion, CKD risk factors increased the likelihood of development in children carrying the AA or GA genes, which are examples of wild genes.

Keywords: Hemodialysis, Klotho, Klotho G-395A, Chronic Kidney Disease, End-Stage Renal Disease (ESRD) Thesaurus.

15. Incidence, Risk Factors and Management of Central Venous Catheter Thrombosis in Neonatal Intensive Care Unit

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Abstract:

Background: Central venous catheter (CVC) thrombosis poses a significant challenge in neonatal intensive care units (NICUs). This study aimed to assess the incidence, identify risk factors, and explore management strategies for CVC thrombosis in neonates. **Methods:** The prospective study was conducted from September 2021 to February 2022 in Benha University Hospital and Benha Children Hospital. The study included 150 neonates with central venous lines. In-depth assessments, including medical history, examinations, laboratory investigations, and Doppler ultrasound, were employed. **Results:** Among the neonates, 12% experienced CVC thrombosis, with a mortality rate of 38%. Analysis revealed significant associations between thrombosis and factors such as gestational age ($P < 0.001$), weight ($P < 0.001$), and sepsis ($P < 0.001$). Laboratory findings indicated higher hematocrit levels ($P < 0.0001$) and elevated C-reactive protein (CRP) levels ($P = 0.011$) in neonates with positive thrombosis. Multivariate analysis identified duration of CVC > 8.52 as the most significant factor (OR = 109.948, $P < 0.001$), followed by infected CVC (OR = 40.203, $P < 0.001$) and hematocrit level > 54.32 (OR = 15.617, $P = 0.002$). ROC analysis demonstrated high predictive value for both hematocrit (AUC = 0.877, $P < 0.001$) and duration of CVC (AUC = 0.822, $P < 0.001$). **Conclusions:** Duration of CVC > 8.52, infected CVC, and elevated hematocrit levels were identified as significant risk factors for CVC thrombosis in neonates.

Keywords: CVC Thrombosis, Neonatal Intensive Care Unit, Risk Factors, Hematocrit, Mortality.

16. Progranulin in The Umbilical Cord Blood as Predictor of Early Onset Sepsis in Premature Infants with Premature Rupture of Membrane

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Abstract:

Background: In A high rate of death and long-term morbidity are still linked with early-life sepsis caused by bacterial, viral, or fungal infections, despite advancements in newborn care and maternal antibiotic prophylaxis for GBS. Early onset neonatal sepsis (EOS) is a major contributor to sickness and death in the first seventy-two hours of a baby's life. In cases of neonatal septicemia, the C-reactive protein (CRP) test seems to be useful. Progranulin (PGRN) is an autocrine growth factor of 593 amino acids that regulates the crucial TNF/TNFR pathway and is expressed in many mammalian organs. It is a multifunctional immunoregulatory protein. The fields of infectious and inflammatory disorders have conducted much research on it. Methods: Fifty newborns were randomly assigned to the following groups for the research, which took place in a neonatal intensive care unit (NICU): Group I (cases): includes newborns hospitalised to the neonatal intensive care unit due to early onset neonatal sepsis. Apparent healthy newborns made comprised Group II (control). Umbilical cord blood was tested for progranulin levels. Results: Cases and controls did not differ substantially in terms of TLC. Compared to controls (3), cases had a higher median CRP (P=0.001). Patients' progranulin (PGRN) levels were substantially higher than controls' (P=0.001). Conclusion Neonatal sepsis may be indicated by PGRN.

Keywords: Early onset newborn, sepsis biomarker, diagnosis using PGRN-C-reactive protein.

17. Ultrasound-Guided Lumbar Erector Spinae Plane Block compared to Quadratus Lumborum Block for Postoperative Analgesia in Inguinal Hernia repair operations

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Abstract:

Background: More The correction of inguinal hernias is a technique that is performed on more than 20 million individuals annually and is a very common surgery all over the globe. In the study, a comparison was made between the Quadratus Lumborum Block and the Lumbar Erector Spinae Plane Block for Inguinal Hernia Repair Operations. The purpose of the study was to evaluate the consumption of morphine over a period of twenty-four hours and to determine the occurrence of postoperative issues such as the formation of hematomas and the toxicity of local anesthetics. A number of approaches: This prospective randomized clinical research included sixty persons who were scheduled to have surgery to treat an inguinal hernia. The participants were required to undergo surgery. Patients were divided into two groups that were identical to one another. Every single patient in the L-ESP group, which consisted of thirty individuals, was given a unilateral L-ESP block. In the QLB group, which consisted of thirty patients, a unilateral QLB block was successfully performed. According to the findings, the L-ESP group used considerably smaller quantities of morphine and ketorolac in the first twenty-four hours after surgery in compared to the QLB group (P values = 0.010 and 0.002, respectively). When it came to success rate, patient satisfaction, postoperative nausea and vomiting, hypotension, and bradycardia, the two groups exhibited findings that were quite comparable among themselves. In conclusion, when there is a comparison between the Quadratus Lumborum Block and the Lumbar Erector Spinae Plane Block, it is found that the latter is more advantageous for inguinal hernia repair procedures. In comparison to the QLB group, the L-ESP group drank a considerably smaller quantity of morphine and ketorolac during the first twenty-four hours of the observation period.

Keywords: Ultrasound-Reconstruction of the inguinal hernia, quadratus lumborum block, postoperative analgesia, and guided lumbar erector spinae plane block are all procedures that are performed.

18. Oral Midodrine Use in Weaning of Intravenous Vasopressor Infusions in Septic Shock Patients

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Abstract:

Background: Sepsis is characterized as an infection that causes potentially fatal organ malfunction as a result of a dysregulated patient response to the infection (SSC), with septic shock being a subgroup of sepsis linked with greater fatality rates due to significant underlying metabolic, cellular, and circulatory abnormalities. This study aimed to evaluate the effects of midodrine on the weaning process off IV vasopressors as well as the drug's economic value. Methods: This prospective controlled trial was executed on One hundred patients with septic shock. Patients were split into two equal groups: the norepinephrine group (IV norepinephrine only): patients were given intravenous vasopressor infusion and Midodrine group: given oral midodrine 10 mg three times day, furthermore an intravenous vasopressor (IV norepinephrine). Results: The midodrine group had a higher APACHE II score compared to the control group (P=0.009). Midodrine significantly reduced the requirement for HD or MV, which in turn reduced the length of time patients spent in the intensive care unit (ICU) and the associated costs. Midodrine has a beneficial effect on ICU costs. The period of intravenous injection of nor-epinephrine is favourably affected by midodrine. Conclusions: The study's authors state that midodrine has the potential to aid resuscitated patients with septic shock in weaning off intravenous vasopressors, which would have many economic benefits, such as reduced total expenditures and shorter stays in the critical care unit. Midodrine may be helpful in treating patients with septic shock.

Keywords: Oral Midodrine, Weaning, Intravenous Vasopressor Infusions, Septic Shock.

4.Obstetrics; Gynecology; Cardiology; Hepatology; Gastroenterology and Neurological Diseases

19. Value of Immature Granulocyte in Prediction of Severity of Coronary Artery Disease and Short-Term Outcome in Patients with Ischemic Heart Disease

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Abstract:

Background: Ischemic Ischemic heart disease [IHD] is a leading cause of hospitalizations and visits to the emergency room. Rupture of atherosclerotic plaques and coronary artery thrombosis, either whole or partial, are typical symptoms of IHD. This research set out to compare the SYNTAX score [SX score] with the value of immature granulocyte in predicting the severity of coronary artery disease in ischemic heart disease patients having coronary angiography at Benha University. Included were 200 individuals who had coronary artery disease. Patients with cancer, inflammatory bowel disease, chronic renal failure, chronic liver failure, heart failure, being under the age of 18, pregnant, or using steroids or immunosuppressive drugs were excluded. The results showed that hypertension, heart rate, LDL and triglyceride levels, and HDL levels were all lower in patients with high granulocytes. The amount of granulocytes was significantly correlated with other inflammatory indicators [p value < 0.05]. Complex coronary vasculature and a high syntax score were both linked to a high granulocyte level.

Keywords: CCS., EF%., IG%., MHR.

20. Premature Ejaculation Bulbospongius Muscle injection by Botox 100IU (Anatomic Basis and Clinical Effect)

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Abstract:

Background: Premature Male incontinence is characterised by ejaculation. There is no specific treatment for this illness. Our goal is to look at how individuals with PE who had botulinum-A toxin injections into their bulbospongiosus muscles fared after treatment. Methods: Through percutaneous endovascular injection, ninety outpatients inject five centilitres of botulinum-A toxin diluted with ten centilitres of saline into the bulbospongiosus muscle on each side (PE). The patients were assessed using the Premature Ejaculation Profile scores in conjunction with the intravaginal ejaculatory latency time (IELT) (PEP). Checks again one, three, and six months after the procedure. Without any adverse effects, patients were able to increase their intravaginal ejaculatory delay duration and enhance their PEP score relative to their pretreatment performance. Conclusions. injection A safe and effective method for treating PE involves injecting botulinum toxin into the bulbospongiosus muscle.

Keywords: early Ejaculation; the bulbospongiosus muscle; botulinum poisoning

21. Cervical Volume Assessment to Predict the Result of Induction of Labor: A Prospective Observational Study

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Abstract:

Background: However, other researchers have questioned the bishop score's predictive value for the outcome of labor induction due to its highly subjective nature, which is influenced by a doctor's clinical expertise. The purpose of this study was to assess the relationship between the frequency of deliveries within a day and the cervical volume as determined by ultrasonography and the bishop score. Methods: This study involved the prospective observational correlation of 68 pregnant patients who were receiving care at Benha University Hospital. Transvaginal ultrasonography and the bishop score were both used in the pre-induction cervical assessment. The cervix's anteroposterior diameter was measured, and the cervical volume was computed using the geometric view assumption that the cervix is a cylinder ($V = \pi r2h$). Results: The present study found that successful induction of labor correlated significantly with the bishop score (p value 0.002), posterior cervical angle (p value <0.001), and cervical volume (p value 0.022). The mean cervical volume in patients delivered vaginally was 29.8±7.38mm, while in patients delivered by C.S., it was 23.99±6.04mm. Conclusion: Transvaginal ultrasound assessment of cervical length and volume holds promise as a reliable and patient-friendly tool for monitoring labor progression during IOL and predicting its success.

Keywords: Cervical Volume; Induction of Labor.

22. Role of MicroRNA-1 as Diagnostic and Differentiating Biomarker between Acute Anterior Myocardial Infarction and Unstable Angina

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Abstract:

Worldwide, coronary artery disease (CAD) accounts for a disproportionate share of all cardiovascular deaths. Disruption of the atherosclerotic plaque and thrombotic blockage of the artery cause acute coronary syndrome (ACS), a subtype of coronary artery disease (CAD). Acute anterior myocardial infarction (MI) and unstable angina (UA) are disorders that are part of acute coronary syndrome (ACS). These diseases indicate myocardial damage and necrosis. Assessment of symptoms, changes in troponin, and electrocardiogram (ECG) abnormalities due to ischemia are the current clinical diagnostic tools for acute coronary syndrome (ACS). On the other hand, "classic" symptoms are rare and don't reliably differentiate between cardiac and noncardiac reasons of chest discomfort in certain groups, such as diabetics, women, and the elderly. Ultimately, miR-1 enhances myoblast development by targeting the production of heat shock proteins (HSP)-60, HSP-70, and Bcl-2. It is secreted into the bloodstream after cardiac damage and is strongly expressed in skeletal muscle and cardiomyocytes. Its promise for quick diagnosis is supported by the fact that its level rises in plasma samples taken from patients shortly after symptoms begin. A number of diseases and conditions, including cardiovascular disease, have miRNAs in circulation as potential non-invasive indicators (CVD) The goal of this study was to identify if microRNA-1 could be utilised as a tool for discriminating between unstable angina (UA) and acute anterior myocardial infarction (MI), as well as to evaluate the impact of microRNA-1 expression in the diagnosis of UA and MI in patients (UA).

Keywords: unstable angina pectoris, microRNA-1, and acute anterior myocardial infarction.

23. Sexual Disorders in Females with Bipolar Disorder

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Abstract:

Two or more attacks of hypomania, mania, depression, or mixed episodes, interspersed with euthymic intervals, constitute bipolar disorder (BD). Among the leading causes of disability globally, BD is a major concern. Among all mental health illnesses, sexual dysfunction is underestimated and more common in the general population compared to those with mental health issues. The purpose of this article is to provide a comprehensive overview of the sexual abnormalities and behaviors that are often seen in bipolar female patients. Final thoughts: Sexual dysfunctions and abnormal behaviors were more common in women with BD. Manic episodes are associated with increased hazardous sexual conduct in people with BD. Additionally, it was mentioned that couples' sexual pleasure is negatively impacted by hypersexuality during manic episodes and hyposexuality during depressed episodes, and this effect typically continues into the times between episodes. On the other hand, sex may be linked to negative emotions rather than diminished desire during depressed periods. Individuals with mental health illnesses have a greater chance of sexual difficulties damaging personal interactions and quality of life.

Keywords: Bipolar disorder, Sexual disorders, Females.

Scientific Sessions

Topics of

Health & Clinical Science

II (Nursing)

5. Obstetrics ; Gynecology and Pediatric Nursing

1. Effect of Safety Measures Program on Systemic Lupus Erythematosus Patients' Outcome

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Abstract:

Background: Systemic lupus erythematosus (SLE) is a multisystem disease associated with. significant morbidity and mortality. Safety measures programs are the activities or strategies that are directed towards raising the general level of health and patients' well-being. Aim of study: This study aimed to evaluate the effect of safety measures program on Systemic lupus erythematosus patients' outcome. Design: Quasi-experimental research design was utilized to conduct the aim of this study. Setting: The study was conducted at Rheumatology out-patient clinic at Benha University Hospital in Qualubia Governorate. Sample: Purposive sample of adult patients with systemic lupus erythematosus who are attending at the previous mentioned setting. Tools: Five tools are used Tool I: Structure interviewing questionnaire. Tool II: Patients knowledge about safety measures, Tool III: Fatigue Severity Scale, Tool IV: patient-reported outcome (PRO) & Tool V: Safety measures activities regarding SLE. Results: There was a highly statistically significant differences regarding total knowledge about safety measures for SLE, fatigue level and total Lupus PRO between pre and post implementing the program (P-value < 0.001**). Conclusion: Implementation of safety measures program had a positive and significant effect on patients' knowledge level as well as reducing fatigue severity and improving total Lupus PRO three months post safety measures program were found. Recommendation: Implementing educational program for patients with systemic lupus erythematosus in order to enhance their health status and prevent complications.

Keywords: Safety Measures Program, Systemic Lupus Erythematosus, Patient-Reported Outcome.

2. The Effect of Implementing Nursing Safety Measures and Healthy Nutritional Regimen for Patients Undergoing Cholecystectomy

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Abstract:

Background: The surgical removal of the gallbladder is cholecystectomy, which is currently one of the most prevalent abdominal surgical procedures. The knowledge, perspectives, and attitudes of nurses affected the extent to which they adhered to safety guidelines and implemented a healthy nutritional regimen for patients after cholecystectomy. Aim of the study: This research aimed to ascertain the impact of implementing nursing safety measures and healthy nutritional regimen for patients undergoing cholecystectomy. Design: In order to accomplish the purpose of this work, a pre\post research design approach comparing interventions before and after their implementation was utilized. Setting: The research was carried out at an outpatient clinic and surgical department associated with Benha University Hospital, located in the Qualyubia Governorate of Egypt. Sample: All eligible nurses (67) employed in the aforementioned contexts were selected as a convenience sample. And the sample also included 75 patients of both sexes were selected as a purposeful sample. Tools: Three tools were utilized, tool I: Structured questionnaire for nurses to determine nurses' knowledge concerning basic concepts of safety measures and healthy nutritional regimen for patient post cholecystectomy, tool II: Observational checklist to determine nurses' practices pre, during and post cholecystectomy, tool III: Cholecystectomy patients' assessment questionnaire to assess expected complications post cholecystectomy. Results: 28% of nurses under study had good total knowledge level about cholecystectomy pre-educational program which improved to 76% and 73.3% of them post and during follow up respectively, 69.3% of nurses under study achieved a satisfactory total practices level about perioperative patients' safety pre-educational program which enhanced to 94.7% and 93.3% of them post and during follow up respectively. Conclusion: On the basis of the present study's findings, it is possible to conclude that the knowledge and practise scores of the examined nurses improved statistically significantly following the adoption of the dietary regimen programme and safety measures for nurses. Positive patients' outcomes regarding preventing post cholecystectomy complications which supported the study hypothesis. Recommendations: Implementing regular in-service training programs for surgical nurses with the aim of enhancing, updating, and revitalizing their understanding and application of patient care in the context of cholecystectomy.

Keywords: Safety Measures, Healthy Nutritional Regimen, Cholecystectomy.

3. Effect of Evidence-Based Guidelines Regarding Port-A-Cath Care on Oncology Nurses' Performance and Patients' Health Outcomes

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Abstract:

Implantable Port-A- Catheter is a central vascular access device that provides direct access to large blood vessels. The device has become an integral part of daily oncology nursing clinical care, improving nurses' knowledge and practice is crucial for compliance minimizing complications, and improving patient outcomes. Aim: It was to evaluate the effect of evidence-based guidelines regarding port-a-Cath care on oncology nurses' performance and patients' health outcomes. Design: A quasi-experimental design was used. Setting: medical oncology and nuclear medicine unit and inpatient unit at Benha University Hospital, Egypt. Sample: A convenient sample of (67) Oncology nurses and a purposive sample of 134 patients who connected to port-a-cath., they were classified into two groups; group A was assessed pre-evidence-based nursing guidelines intervention; and group B was evaluated post-evidence-based nursing guidelines intervention. Both groups of patients had been cared for by the same group of studied nurses, concerning the port-a-catheter procedure. Tools for data collection: A structured Questionnaire, nurse's practice observational Checklist, Patient assessment, and clinical health outcomes data assessment. Results: There were statistically significant differences between pre & post-EBNGI regarding the knowledge and practice of the studied nurses regarding care for the patient with port-A-catheter. Patients (Group B) who had been cared for by the same group of studied nurses post-EBNGI had l fewer complications as compared with patients (Group A) who had been cared for by the same group of studied nurses pre-EBNGI, but this decrease was not statistically significant difference in relation to their health outcomes. Conclusions: The evidence-based nursing guidelines intervention were helpful in the improvement of the nurses' knowledge and practices for the prevention of port-A-catheter-related complications among oncology patients. Recommendations: Periodic educational programs regarding port-a-catheter care for nurses who provide care for patients connected to port-a-cath.

Keywords: Evidence-Based Guidelines, Health Outcomes, Oncology Nurses, Patients', Port- A- Cath, Performance.

4. Effect of Educational Guidlines on Nurses' Performance Regarding Patients' Safety Undergoing Bronchoscopy

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Abstract:

Background: A bronchoscopy is an essential tool for clinicians and health care providers treating patients with lung diseases. Aim of the study: evaluate the effect of educational guidelines on nurses' performance regarding patients' safety undergoing bronchoscopy. Design: A quasi-experimental research design was utilized to achieve the aim of this study. Setting: This study was conducted in chest department at Benha University Hospital, Qalyubiyah Governorate, Egypt. Sample Convenience sample of all available nurses (33). Tools: two tools were used to collect data for this study. Tool I: Nurses' structured questionnaire to assess nurses' knowledge related bronchoscopy and patients' safety undergoing bronchoscopy. Tool II :Observational checklist regarding patients' safety undergoing bronchoscopy to assess nurses' practice related bronchoscopy and patients' safety undergoing bronchoscopy Result: 43.3% of studied nurses had a satisfactory level of total knowledge and practice about patients' safety undergoing bronchoscopy pre educational guidelines implementation compared to 73.3 % of them at post educational guidelines implementation with (p value =0.012*)and clarifies that there was a positive and significant correlation between total nurses' knowledge with their total practice regarding patients' safety undergoing bronchoscopy post educational guidelines implementation with p-value of (0.023*), studied nurses had a competent level of total practice regarding patients' safety undergoing bronchoscopy with (p value =0.048*)..Conclusion There was highly statistically significant improvement of nurses' knowledge and total nurses' practice regarding patients' safety undergoing bronchoscopy post implementing the educational guidelines .Recommendation :A similar study should be replicated on large sample and other places to generalize the findings.

Keywords: Nurses' Performance, Patients' Safety, Bronchoscopy, Educational Guideline

5. Assessment of Mothers' Knowledge regarding Care of their Children Undergoing Congenital Club-Foot Surgery

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Abstract:

Background: Congenital talipes equinovarus is a birth anomaly impacting the musculoskeletal system, leading to the misalignment of a child's feet. This condition significantly impacts a child's physical capabilities and overall health, resulting in a diminished quality of life. Aim of study was to assess mothers' knowledge regarding care of their children undergoing congenital club-foot surgery. Research design: A descriptive design was utilized to conduct this study. Setting: The study was conducted in the outpatient clinic in orthopedic pediatric departments at Benha university hospital and Benha Specialized Pediatric Hospital. Sample: A convenient sample of 50 children accompanied their mothers were selected. Tools of data collection: A structured interviewing questionnaire sheet to assess personal characteristic of mothers', children, and their knowledge regarding clubfoot. Results: Less than half of the studied mothers were in the age group 25 -< 30 years with mean age (27.52 ± 5.67) years old, half of the studied mothers had secondary education & more than two thirds of them were working, more than half of the studied children are in the age group 1 -< 3 years with mean age is 3.18 ± 1.07 years and first ranked, the majority of them are male. The majority of studied mothers have inadequate knowledge level regarding club foot. Conclusion: There is a statistically significant relation between total mothers' knowledge and their age, educational level, and consanguinity. Recommendations: Mothers of children undergoing clubfoot should attend educational program and workshop to increase their knowledge.

Keywords: Care; Children; Clubfoot surgery; Knowledge; Mothers

6. Effect of Educational Program on Mothers' Knowledge and Reported Practices regarding their Children Suffering from Short Stature

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Abstract:

Background: Short stature is a low height for age of the child compared to the standard child of the same age. Short stature children experience impaired physical and mental development, low immunity, impaired nutrition and health, and low academic achievement and impact on productivity. **Aim of the study**: Evaluating the effect of educational program on Mothers 'Knowledge and Reported Practices regarding their Children suffering from Short Stature. **Research design**: Quasi-experimental design was utilized. **Research settings:** The current research was performed in Outpatient of Endocrinology Clinic at Benha University Hospital and Health Insurance Hospital at Benha city. **Research sample:** A purposive sample of 70 mothers and their children suffering from short stature. **Tools of data collection:** tool I: A structured interview questionnaire sheet consisted of 3 parts, part one: Mothers' characteristics, part two: Children characteristics and part three: Mothers' knowledge regarding short stature, tool II: Mother s' reported practice regarding short stature and tool III: Mothers' attitude towards short stature. **Research results:** The majority of mothers had good knowledge, satisfactory practice, and positive attitude post educational program implementation. **Conclusion:** The educational program was effective in improving mothers' knowledge, reported practice and attitude regarding their children with short stature post educational program implementation compared to pre- educational program implementation. **Recommendation:** Stress management training should be provided for the purpose of alleviating the psychological issues of short children and future research should be replicated on a large sample of mothers in different setting which are needed for generalization of the obtained results.

Keywords: Children, Educational Program, Mothers' Knowledge, Reported Practices, Short Stature.

7. Effect of Lamaze Technique on Labor Pain and Women's Satisfaction During First Stage of Labor

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Abstract:

Background: Lamaze breathing technique is an effective noninvasive, non-pharmacologic and supportive technique for reducing labor pain and improving the behavioral responses of women in labor. It is known as a method of psycho prophylaxis that prepares a pregnant woman to deal actively with contractions. **Aim of research**: To evaluate the effect of Lamaze technique on labor pain and women's satisfaction during first stage of labor. **Research design:** A Quasi-experimental research design. **Research setting:** The study was conducted at obstetrics and gynecological out-patient clinic and labor unit of obstetrics and gynecological department affiliated to Benha University Hospital. **Research sample:** A purposive sample of 140 pregnant women divided randomly into study group [70] and control group [70]. **Tools of data collection:** Five tools were used to conduct this research: tool I :A structured interviewing questionnaire sheet, tool II: Numeric Pain Rating Scale, tool III: Partograph، tool V: Apgar score and tool IV: Woman's Satisfaction scale. **Research results:** The result of current study showed that there was no statistically significant difference between both groups regarding intensity of labor pain score during first stage of labor before applying of Lamaze technique while, there was a reduction of intensity of labor pain score among study group compared to control group during the first stage of labor after practicing the Lamaze technique with a highly statistically significant difference between both groups**.** Also، indicated that more than three quarters of studied women were satisfied with applying Lamaze technique compared to more than one fifth of them were unsatisfied. **Conclusion:** Applying Lamaze technique during first stage of labor had a positive effect on enhancing labor pain and increasing women's satisfaction. **Recommendation:** Designing brochures regarding Lamaze breathing exercise should be available at outpatient clinics، labor unit and obstetrics and gynecology departments for all pregnant women.

Keywords: First Stage of Labor , Labor Pain , Lamaze Technique , Women's Satisfaction.

8. Effect of Educational Program Based on Levine's Conservation Model on The Quality of Life of Infertile Women

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Abstract:

Background: Infertility failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. Aim of research: investigate the Effect of educational program based on Levine's conservation model on the quality of life of infertile women. Research design: A Quasi- experimental study (study and control group) was employed to complete the objective of the investigation. Research setting: An obstetrics and gynecological outpatient clinic affiliated with Benha University hospital. Research sample: A purposive sample of 90 women with infertility was used which divided equally into two groups (each 45 women). Tools of data collection: Four tools were employed tool (I) A Structured interviewing questionnaire, tool (II)Evaluation infertile women's knowledge concerning infertility, tool (III)Visual Analogue Scale for Fatigue to assess infertile women fatigue, Tool (IV) Fertility life quality questionnaire to assess life quality of infertile women. Results: A significantly significant difference was noted between study and control groups regarding knowledge, fatigue, energy, and quality of life pertaining to infertility following the application of Levine's conservation model p(<0.001)and there was greatly statistically significant positive connection between total quality of life, total knowledge , total fatigue and total energy in both study and control groups at pre , post and follow up intervention phases(p<0.001). Conclusion: Levine's conservation model had a positive impact on life quality of infertile women as well as knowledge, energy, and fatigue. Recommendations: Designing health educational program for infertile women to improve and update the most current knowledge, practices, and life quality.

Keywords: Infertile Women, Levine's Conservation Model, Quality of Life

6. Psychiatric; Mental Health and Community Health Nursing

9. Health Risks Related to Extreme Temperature Resulting from Climate Changes among Older Adults with Respiratory Diseases

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Abstract:

Background: Extreme temperatures are major environmental health hazards resulting from climate changes, represent a massive direct threat to respiratory health by aggravating respiratory diseases or indirectly by increasing exposure to risk factors for respiratory diseases and associated with an overall morbidity and mortality of older adults with chronic respiratory diseases. This study aimed to assess health risks related to extreme temperature resulting from climate changes among older adults with respiratory diseases. Research design: A descriptive research design was utilized in this study. Setting: Chest Outpatient Clinic in Benha University Hospital. The sample: A simple random sample was used which included 297 older adults with chronic respiratory diseases. Tool: One tool was used: A structured interviewing questionnaire to assess socio-demographic characteristics of the studied older adults with chronic respiratory diseases, respiratory health risks of the studied older adults related to extreme temperature, knowledge of the studied older adults regarding extreme temperatures resulting from climate change and chronic respiratory diseases and reported practice of the studied older adults regarding their adaptation to lessen the impact of extreme temperature on their respiratory health. Results: 66% of the studied older adults aged from 60 to less than 65 years with mean ±SD 63.21±7.52, 35.7% of them had asthma, 66.3 % of them had average total knowledge level about extreme temperatures and chronic respiratory diseases and 73.7 % of them had satisfactory total reported practices level regarding their adaptation to lessen the impact of extreme temperature on their respiratory health. Conclusion: There was a positive highly statistically significant relation between the studied older adults' total knowledge level and their total practices level. Recommendation: Health education program should be developed and implemented to improve older adults with chronic respiratory diseases knowledge and practices regarding their adaptation to lessen the impact of extreme temperature on their respiratory health status.

Keywords: Climate changes, Extreme temperatures, Older adults, Respiratory diseases.

10. Quality of Life among Patients with Helicobacter Pylori Infection

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Abstract:

Background: Helicobacter pylori infection is one of the most prevalent bacterial disorders worldwide, contributing to around 50% of all infections. Aim of study was to assess the quality of life among patients with helicobacter pylori infection. Research Design: Descriptive research design was utilized in conducting this study. Setting: The Benha University Hospital in Benha City's Medical Outpatient Clinics served as the study's location. Sample: A simple random sample was employed. Which included 288 patients. Tools. Two tools were utilized. Tool I: A structured interviewing questionnaire: to assess patient's socio demographic characteristics, medical history, knowledge about helicobacter pylori infection and reported practices for preventing complications of helicobacter pylori infection. Tool II: A scale for determining the quality of Life of helicobacter pylori-infected patients. Results:39.2% of studied patients 'age ranged between 50 to less than 60 years old, 27.1 % suffered from chronic diseases, 92.4 % of them had diagnosed with H. pylori infection from less than one year, 45.8% had average knowledge level about helicobacter pylori infection, 55.6% exhibited unsatisfactory practices level for preventing complication of helicobacter pylori infection, 32.3 % of them had diminished quality of Life level. Conclusion: less than one fifth of the patients had good knowledge or understanding of helicobacter pylori, while over than half of them had satisfactory levels of practice about the infection. Furthermore, less than half of them had an average quality of Life. Strong positive relations were observed between the total knowledge score, total reported practices score, and overall quality of Life score of the patients under research. Recommendation: develop health educational programs for helicobacter pylori infection that help patients to improve and update the most current knowledge, practices, and quality of Life about helicobacter pylori infection.

Keywords: Keywords: Helicobacter Pylori Infection, Patients, Quality of life.

11. Mothers' Care for their Children with Open Heart Surgery

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Abstract:

Background: Open heart surgery is an incision that is made through the breastbone while the child is under general anesthesia. The aim of the study was to assess mothers' care for their children with open heart surgery. Research design: A descriptive research design was utilized to conduct this study. Setting: This study was carried out at the Cardiac Outpatient Clinic in the Kaluobia Governorate, which is connected to the Bahteem Health Insurance Hospital for Specialized Surgeries. Sample: Purposive sample was used in this study. It included 150 mothers whose children had open heart surgery. Tool of data collection: one tool was used and consisted of five parts: A structured interviewing questionnaire to assess socio demographic characteristics of mothers, personal characteristics of children, medical history of children, knowledge of mothers about open heart surgery, and reported practices of mothers care for their children with open heart surgery. Results: 48.7% of the studied mothers were between the ages of 20 and fewer than 35 years old. 50% of the studied children aged 1 to less than 5 years, 63.3% of them were boys. 48% of the studied mothers had average total knowledge level about open heart surgery. 55.3% of studied mothers had satisfactory total reported practices level regarding open heart surgery. Conclusion: there was positive highly statistically significant correlation between total knowledge score, and total reported practices score of mothers regarding open heart surgery. Recommendation: Develop health educational program for mothers whose children had open heart surgery to increase mothers' understanding of open-heart surgery, and their care for children with open heart surgery.

Keywords: Mothers' Care, Children, Open Heart Surgery.

12. Correlation between Self-Compassion and Body-Image among Women with Mastectomy

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Abstract:

Background: Mastectomy women always struggle to accept their body after the surgery and become isolated, criticize herself, and unable to use self-compassion as a mean of coping with such adversity**. Aim of the study**: This study aimed to assess the correlation between self-compassion and body-image among women with mastectomy. **Resarch design:** A descriptive correlational design was utilized to achieve the aim of the study. **Setting:** The study was conducted at general surgery outpatient's clinics at Benha University Hospital, which is affiliated to Ministry of High Education, Benha city, Qalubia Governorate. **Subject:** A purposive sample of (60) women with mastectomy was utilized in this study. **Tools:** Three tools were used for data collection: ***Tool (1):*** - A- structured interviewing questionnaire sheet included socio demographic as well as clinical characteristics of the studied women. ***Tool (2):*** - Self-Compassion Scale (SCS) & ***Tool (3):***- Body-Image Scale. **Results:** The result of the present study revealed that, the majority (86.7%) of the studied women had low level of self-compassion and the majority (90%) of the studied women had poor level of body-image. **Conclusion:** There was a high statistically significant positive correlation between mean score of total self-compassion and mean score of total body-image among the studied women with mastectomy. **Recommendations:** Psychological intervention should be integrated as a part of routine nursing care to improve their self-compassion and body-image for all women with mastectomy.

Keywords: Mastectomy, Body-Image, Self-Compassion.

13. Occupational Safety Program regarding Preventive Measures of Occupational Health Hazards among Agriculture Child Labors

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Abstract:

Background: Occupational health hazards in agricultural work are subjects to the health and safety risks inherent to a rural environment and deriving from the specific work processes. **Aim:** Evaluate the effect of occupational safety program regarding preventive measures of occupational health hazards among agriculture child labor. **Design:** A quasi-experimental design was used. **Settings: -** Cluster sample was conducted in Kafr Shokr sector in Qalyubia Gover, it includes 23 Village, 25% was selected from 23 Village, 5 Village was selected, 5 Preparatory School was selected then followed by visits. **Sample:** Simple random sample. **Tools:** Two tools were used; **Tool (I)**: A structured interviewing questionnaire: Which included Socio-demographic characteristics of the studied children and children`s parents' data, occupational data of studied children and work environmental condition, history of occupational health problems and knowledge of children regarding occupational health hazards and first aid instructions. **Tool (II):** Observational checklist. That divided to; use of protective equipment, child practices regarding preventive measures of occupational health hazards. **Results:** 7.6% of children had good total knowledge level regarding occupational health hazards of agriculture labor that improved to be 70.5% of them post occupational safety program implementation,89.4% of them had satisfactory total practices level regarding using protective equipment post occupational safety program implementation. **Conclusion:** Occupational safety program regarding preventive measure had succeeded in improving the children knowledge and practices regarding occupational health hazards at agriculture labor. **Recommendations:** Develop continuous safety program about protective measures for all children at workplace to prevent occupational health hazards.

Keywords: Occupational Safety Program, Preventive Measures, Occupational Health Hazards, and Child Labor.

7. Nursing Administration

14. Organizational Culture self -Learning Package for Nurses: it's effect on their Innovative Work

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Abstract:

Background: Organizational culture helps nurses in the work, and self-learning resources greatly increase each nurse's capacity for innovation **Aim**: To effect of organizational culture self-learning package in nurses' innovation work. **Design:** A quasi-experimental study design was used pre, immediately post self- learning package phase and follow up phase (after three months) **Setting:** The study was conducted at medical departments/units at Benha University Hospital. **Subject**: Consisted of45 who had at least one year of job experience and were available during the data collection period. **Tools:** Include four tools I. knowledge regard Organizational culture questionnaire, II attitude regard organizational culture questionnaire, III. Performance regard organizational culture observational chick list, and IV**.** Innovative work questionnaire .**Results:** The majority of the studied nurses (84.4%, 80 %) had an adequate level of knowledge regarding organizational culture in the immediate-post and follow up of self-learning package phases, Additionally (84.4%, 73.3%) the studied nurses had a positive level of attitudes regarding organizational culture in the immediate-post and follow up of self-learning package phases, also the majority of the studied nurses (93.3%, 86.7%) had an competent performance level regarding organizational culture in the immediate-post and follow up of self-learning package phases Furthermore, (82.2%, 73.3%) of the studied nurses had a high level of innovative work implementing completing the organizational culture self- learning package in the immediate-post and follow up of self-learning package phases. **Conclusion:** There was a highly statistically significant positive correlation between nurses' total knowledge, attitude, performance regard organizational culture and total innovative work through study phases **Recommendations:** Implement organizational culture strategy through hospital strategic planning to remain competitive in today's healthcare market. Provide technology training for nurses and integrate new technological support learning media and innovation that promote organizational culture.

Keywords: Innovative Work. Nurses, Organizational Culture. Self- Learning Package.

15. Effect of Paternalistic Leadership Educational Program for Head Nurses on Staff Nurses' Psychological Empowerment

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Abstract:

Background: Paternalistic leadership plays a pivotal role in fostering a supportive, growth-oriented culture within healthcare organizations, thereby influencing the psychological empowerment of staff nurses to excel and deliver exceptional care amidst evolving healthcare dynamics. **The study aimed** to assess the effect of paternalistic leadership educational program for head nurses on staff nursespsychological empowerment. **Design**: Aquasi-experimental design was utilized. **Setting**: The study was conducted in all inpatient units at the medical and surgical buildings at Benha University Hospital.**Subjects**: All 77 head nurses and 300 staff nurses who were available in the previously mentioned setting during the time of data collection. **Tools:** Three tools were used for data collection; (1) Paternalistic leadership knowledge questionnaire, (2) Paternalistic leadership skills self-report and (3) nurses 'psychological empowerment scale. **The study results**: Showed that more than three-quarters (76.6%) of head nurses had poor knowledge level related to paternalisticleadership dimensions at pre-program phase, which it improved to be the majority (80.5%) of them had good knowledge level at post program phase with slightly decrease to be 76.6% at follow up phase. The majority (89.6% & 85.5%) of head nurses had high paternalistic leadership skills at immediate post program and followup phases respectively compared to none of them at pre-program phase. The most (85.2% and 83.1%) of staff nurses had high psychological empowerment levelat immediate post program and follow up phases respectively compared to pre-program phase (10.5%). **The study concluded:** that there was a highly statistically significant positive correlation among head nurses' knowledge, and skills regardingpaternalistic leadership and psychological empowerment at immediate post andfollow up program phases. **The study recommended**: Conducting training in effective paternalistic leadership for aspiring head nurses prior to their appointments to managerial and administrative roles to effectively lead and empower their staff nurses while maintaining a supportive and empowering environment.

Keywords: Educational program; Head nurses; Paternalistic leadership; Psychological empowerment; Staff nurses.

16. Enhancing Nursing Personnel- physicians' Communication and Collaboration: Its Effect on Nursing Productivity

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Abstract:

Background: Background: For optimal patient care and outcomes, effective collaboration and communication between nurses and physicians are essential. This can be attained through various factors that impact nurses' productivity. The study aimed to assess the effect of enhancing nursing personnel- physicians' communication and collaboration on nursing. Design: A quasi-experimental design was utilized. Setting: The study was conducted in emergency and intensive care units (ICU) at Damanhour Medical National Institute. Subjects consisted of all available nursing personnel (52) and physicians (36). Tools of data collection five tools was used; Communication and Collaboration Knowledge Questionnaire. , Communication and Collaboration Attitude Questionnaire Communication Skills Observational Checklist. , Collaboration Skills Observational Checklist. , and Nursing productivity Questionnaire The result showed that nursing personnel(75 %)and physicians(63.9 %)had an inadequate level of knowledge in pre-program phase while in the post program(84.6,90.4%)and follow up(82.7,86.1%)their knowledge levels improved to become adequate. There was a negative attitude prevailing in the pre-program phases (71.2, 66.7 %), which shifted to a positive attitude in the post-program (78.8,83.3%) and follow-up phases (75.0,80.6%). There was incompetent level of skills in pre-program phase (71.2, 55.6 %) which it improved to be competent in the post program (82.7,86.1%) and follow up(80.8,83.3%) . Less than half of nursing personnel (40.4 %) had moderate level of total productivity in pre-program phase while in the post program (67.3%) and follow up (61.6%) there total productivity was improved and became high respectively. Additionally, nursing personnel had moderate level of productivity in pre-program phase while in the post program & follow up their productivity became high. The study concluded that the program effectively improved knowledge, attitude, and skills regarding collaboration and communication among participants during both the post-program and follow-up, as well as in the productivity of nursing personnel. During both the pre-program and follow-up phases, there was a statistically significant positive correlation was evident between nursing personnel and physicians regarding their knowledge, attitude, and skills pertaining to communication, collaboration, and productivity within the nursing personnel. The study recommended developing interprofessional education programs uniting nurses and physicians to enhance collaborative learning and promoting teamwork culture.

Keywords: Collaboration, Communication, Nursing Personnel, Physicians, Productivity.

Scientific Sessions

Topics of Basic Science

8. Botany and Microbiology

1. Assessment of Histological Damage to Rat Liver Induced by Gold Nanoparticles Derived from Bacteria: Preliminary Investigation on Dose-Dependent Effects

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Abstract:

Background: Gold nanoparticles (GNPs) have garnered considerable attention in various biomedical applications due to their unique physicochemical properties. Understanding the dose-dependent histological effects of GNPs on liver tissue in animal models is crucial for evaluating their safety profile and optimizing their therapeutic applications. This study aimed to evaluate the hepatotoxicity of bacterially derived GNP on rat liver for proceeding into a further study.

Material and Methods: Male Wistar rats were divided into four groups: control, 25, 50, 100, and 200 mg/kg GNP, and the rats were given a 15-day acclimatization period. The rats were subjected to lipid peroxidation, oxidative stress, and liver histology tests.

Results: The levels of ALT, AST, and albumin significantly differed from the control group ($P<0.001$), as revealed in Fig. 1. The results revealed that the rats treated with 50 mg/Kg GNPs had the most beneficial effects, while GSH levels were higher in the group treated with 100 mg/GNPs than in the groups treated with 20 mg/L GNPs. In addition, GNPs-treated rats showed an increase in inflammation in the liver, with the presence of inflammatory cells.

Conclusion: These findings emphasize the importance of thorough safety evaluations in GNPs for proceeding the coming research.

Keywords: Gold, Nanoparticle Liver Cancer, Histological, Damage

2. Silver Nanoparticles Combined with Chitosan Demonstrate Strong and Targeted Efficacy Against Pancreatitis

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Abstract:

Background: Pancreatitis, a prevalent inflammatory condition affecting the pancreas, presents with symptoms such as abdominal pain, nausea, and vomiting. The quest for innovative therapeutic strategies to address this condition has led to growing interest in silver nanoparticles (AgNPs) doped with chitosan due to their antimicrobial and anti-inflammatory properties. Chitosan, a natural polysaccharide derived from crustacean exoskeletons, exhibits biocompatibility and various biological activities, including antimicrobial and anti-inflammatory effects. This study investigates the efficacy of AgNPs-Chito in alleviating pancreatitis in an animal model induced by oral administration of ethyl alcohol. **Methods**: Adult male Swiss albino rats were divided into control, induced (pancreatitis induced but not treated), and treated with AgNPs-Chito groups. Parameters including liver function markers, blood glucose levels, pancreatic enzymes, and oxidative markers were evaluated. **Results** indicate that AgNPs-Chito treatment significantly improved liver function markers, reduced blood glucose levels, and decreased levels of pancreatic enzymes compared to the induced group. Furthermore, AgNPs-Chito exhibited antioxidant properties by reducing reactive oxygen species levels and enhancing glutathione S-transferase activity. Histopathological examination revealed protective effects on pancreatic tissue integrity. **Conclusion**: These findings suggest the potential therapeutic benefits of AgNPs-Chito in mitigating alcohol-induced pancreatitis through its multifaceted antimicrobial, anti-inflammatory, and antioxidant actions. Further research is warranted to elucidate the mechanisms underlying these effects and to explore the translational potential of AgNPs-Chito as a novel therapy for pancreatitis.

Keywords: Chronic Pancreatitis; Pancreatic Fibrosis; Sliver Nanoparticle; Chitosan Nanoparticle; Therapeutic Strategies

3. Chitosan-doped Gold Nanoparticles with Potent and Selective activity against Diabetes Mellitus

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Abstract:

Background: Diabetes Mellitus (DM) poses a significant global health challenge, with rising prevalence and associated complications. Despite available treatments, the search for safer and more effective options continues. This study investigates the potential of chitosan-doped silver nanoparticles (AgNPs-Chito) as a novel therapeutic approach for DM.

Methods: Streptozotocin-induced diabetic rats were treated with AgNPs-Chito, and various biochemical and histopathological parameters were assessed.

Results: Our data indicate that AgNPs-Chito administration led to significant improvements in blood glucose levels, lipid profiles, oxidative stress markers, and liver function compared to untreated diabetic rats. Histopathological examination revealed restoration of hepatic architecture in AgNPs-Chito-treated rats.

Conclusion: These findings suggest that AgNPs-Chito may offer a promising strategy for managing DM by mitigating oxidative stress and improving metabolic parameters.

Keywords: Silver Nanoparticles; Chitosan; Diabetes Mellitus; Hepatotoxicity; Oxidative Stress

4. Secondary Metabolites from Marine Fungi as Anticandidia

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Abstract:

Background: Most fungal pathogen-induced infections in humans are caused by species of Candida. Members of these species include Candida albicans, which is the most common cause of opportunistic infections.

Purpose: to determine whether bioactive compounds isolated from thirteen different fungal strains have anticandida properties against a variety of Candida isolates obtained from urine and vaginal samples. The findings demonstrate a marked variation in the inhibitory responses amongst various strains of Candida, indicating a complex interaction between fungal strains and their bioactive compounds. There were clear strain-specific variations, with some fungal strains showing strong efficacy and others showing little to no inhibitory effects. Interestingly, Fungal Strain 8 continuously exhibited strong inhibitory responses, highlighting the significant influence of particular fungal strains. Different Candida isolates had varying levels of sensitivity to bioactive compounds, highlighting the need for specialized antifungal treatments. Clinical relevance can be drawn from the observed diversity in anticandida activity, which points to possible directions for the development of targeted antifungal drugs. Subsequent investigations may delve into fundamental mechanisms, pinpoint pivotal bioactive compounds, and facilitate the advancement of innovative antifungal medication discovery. Conclusion: this research provides significant understanding of the intricate dynamics of anticandida activity, laying the groundwork for future developments in specialized treatments to combat Candida infections.

Keywords: Relevant Terms: Candida Albicans, Marine Fungi, Secondary Metabolites

5. Bacterial Infection Responsibility and Antibiotic Sensitivity in Urinary Tract

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Abstract:

Escherichia coli is the most frequent infecting organism in acute infection. So, knowledge about the frequency and distribution of urinary tract infection (UTI) is important to improve infection control measures. The aim of this research was to determine the prevalence of bacteria isolated from urinary tract infection (UTI) in patients and determination of the antibiotic susceptibility patterns of the Gram-negative bacteria. We evaluated 43 positive culture patients were collected over a period of 6 months starting from Jun 2022 until December 2022 on patients attending various clinical in Egypt. The bacteria were isolated from different ages. Gram-negative bacteria were responsible for 69.8% of the isolates, while Gram-positive were responsible for 30.2%. Escherichia coli was the most prevalent pathogen. Regarding the susceptibility profile, results found Imipenem was the effective antibiotic against bacterial isolates. This study showed that the frequency of Escherichia coli increases the probability of urinary tract infection. Also, this survey indicates the emergence of antibiotic resistant infections in the studied clinics. So, there is a need to improve the effectiveness of integrated infection control programs to control and manage nosocomial infections caused by highly resistant organisms.

Keywords: Gram-negative bacteria, *Escherichia coli*, Urinary tract infection, antibiotic susceptibility.

6. Antibacterial Activity of Some Plant Extracts on Human Pathogenic Bacteria

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Abstract:

Plants have been used since ancient times in folk medicine, involving all medical traditions. Many plants and plant derived antimicrobial components are used in folklore therapeutics for oral hygiene. Thymus Vulgaris and *Cinnamomum camphora* extracts were assayed for the evaluation of their antimicrobial activity against three pathogenic bacteria that were identified biochemically and by VITEK2 system into *Staphylococcus aureus*, *Acinetobacter baumannii complex* and *Klebsiella pneumoniae*. The test of antibiotic susceptibility showed the resistance of the three isolates to at least twenty antibiotics used in this study. In vitro investigations of five Egyptian plant extracts of *Anastatica hierochuntica L* , *Thymus vulgaris* , *Olea europaea leaf* and *costus sasurrea*, *Cinnamomum camphora* showed that aqueous *Thymus Vulgaris* and aqueous *Cinnamomum camphora* extract could exhibit an antibacterial activity against human pathogenic isolates and inhibition zones of 20.0±1.5 ,3.0±0and 20.0 ±1 mm were observed when *Thymus Vulgaris* extract applied against the above-mentioned bacteria, while the inhibition zones of 15.0±0.577,2±0.577 and 18.0±0.577 mm were observed by *Cinnamomum camphora* extract while aqueous plant extracts of *Anastatica hierochuntica L, Olea europaea* leaf and *Costus sasurrea* don´t have any effect on the bacterial isolates .

KeyWords: Staphylococcus aureus, Acinetobacter baumannii complex and Klebsiella pneumoniae, Thymus vulgaris and Cinnamomum camphora

7. Modulation of miR-16 and HO-1 in Egyptian Liver Cancer Patients

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Abstract:

Background: Hepatocellular carcinoma (HCC) poses a substantial global health burden characterized by high mortality rates and limited treatment options, particularly in regions with high prevalence rates such as Egypt. To investigate the role of miR-16 targeting HO-1 in Egyptian patients with liver cancer, elucidating the interplay between miRNAs and their target genes in hepatocarcinogenesis, and assessing their prognostic significance and therapeutic potential in this high-risk population.

Methods: Fifty patients with HCC undergoing follow-up at the general hospital of Benha University, were included in this study. Tumoral and healthy marginal tissues were collected, and RNA was extracted and subjected to reverse transcription to synthesize complementary DNA (cDNA). The expression levels of miR-16 and HO-1 were determined using quantitative real-time PCR, and correlations with clinical parameters were assessed.

Results: Analysis of demographic data revealed a higher proportion of patients over 60 years old, with a majority being female. Significant alterations in the expression levels of HO-1 and miR-16 were observed in tumor samples compared to controls, suggesting their involvement in HCC pathogenesis. Differential expression patterns between metastatic and non-metastatic samples indicate potential roles in metastasis initiation and progression. Correlation analysis revealed associations between genetic expression, demographic characteristics, and clinical parameters, underscoring the complex interplay between miR-16, HO-1, and disease progression.

Conclusion: The findings highlight the potential of miR-16 targeting HO-1 as a therapeutic strategy and emphasize the importance of personalized treatment approaches in high-risk populations. Further research is warranted to elucidate the precise mechanisms and develop novel therapeutic interventions for liver cancer.

Keywords: HO-1, miR-16, HCC, therapeutic potential

8. Antioxidant, Antimicrobial, and Anticancer Activity of An Extract of Two Pollution-Tolerant Green Microalgae

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Abstract:

Microalgae are a potentially valuable source of structurally different and biologically active compounds experiencing pharmaceutical and nutraceutical value. Here we compared the antioxidant, *in vitro* antimicrobial activity, and anticancer potential of the widely investigated green microalga *Tetradesmus obliquus* and the less-studied unicellular species *Myrmecia bisecta.* Based on our findings, *T. obliquus* extracts had much more outstanding antioxidant potentials than those of *M. bisecta* where IC_{50} values of $DPPH^{\cdot}$ and $ABTS^{\cdot+}$ were 16.18 and 23.35 µg.ml^{-1} in *T. obliquus vs.* 20.21 and 26.05 µg.ml^{-1} in *M. bisecta*, respectively. Interestingly, the antibacterial activity of *M. bisecta* extract against the tested human pathogenic bacterial strains was more powerful than those of *T. obliquus*, i.e., 45.2% and 25.3% inhibition *vs.* 32.3% and 14.20% inhibition against *Escherichia coli* and *Staphylococcus aureus*, respectively. Both microalgal species showed significant cytotoxic effects against the HepG2 cell line with IC_{50} values of 36.44 and 40.12 µg.ml^{-1} for *T. obliquus* and *M. bisecta*, respectively. Also, both of the two microalgal species showed significant cytotoxic effects against the WI-38 cell line with IC_{50} values of 65.63 and 61.74 µg.ml^{-1} for *T. obliquus* and *M. bisecta*, respectively. Based on our results, both *T. obliquus* and *Myrmecia bisecta* are reasonable candidates for future applications in pharmaceutical manufacturing.

Keywords: Antioxidant; Anticancer; Antimicrobial activity; Green Microalgae.

9. Treatment Response to Nucleoside Analogues Via MMP-9/NrF2 in Hepatitis B Egyptian Patients

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Abstract:

Background: Hepatitis B virus (HBV) infection is a serious worldwide health concern, especially in highly endemic areas like Egypt. Prolonged HBV infection causes serious liver problems that need efficient antiviral treatment. Although nucleoside analogs are often utilized in medicine, patient response differs for a variety of reasons. Improving outcomes requires an understanding of the molecular processes driving therapy response. Nuclear factor erythroid 2-related factor 2 (NrF2) and matrix metalloproteinase-9 (MMP-9) have been identified as important regulators of HBV pathogenesis and antiviral treatment response. **Methods:** In this outpatient clinic case-control research, 102 controls and 428 HBV patients participated. PCR was used to evaluate the genetic expression of NrF2 and MMP-9. Gene expression levels were used to assess therapy response in patients receiving nucleoside analogues. **Results:** Patients receiving various nucleoside analogues showed significant variations in MMP-9 and NrF2 expression. When compared to naïve or control groups, entecavir medication was linked to a substantial decrease in MMP-9 expression, indicating that it is effective in lowering MMP-9 levels. Comparatively speaking to MMP-9, NrF2 expression showed rather similar tendencies. **Conclusion**: our research sheds light on the molecular processes that underlie Egyptian HBV patients' responses to nucleoside analogue therapy via the MMP-9 and NrF2 pathways. In cases of chronic HBV infection, MMP-9 and NrF2 show potential as prognostic biomarkers for treatment outcomes. To further understand processes and investigate clinical consequences, more research is required. This might lead to the development of tailored treatment strategies that improve clinical results.

Keywords: HBV, MMP-9, NrF2, Nucleosides

10. Efficiency of Utilizing Microalgae and Duckweed to Remediate Aquaculture Effluent Comprehensive Review

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Abstract:

Numerous nations have experienced a shortage of water in recent years. Since microalgae and duckweed are used to clean wastewater in recent years. An in-depth knowledge of the applications of duckweed and microalgae for the removal of nutrients from aquaculture wastewater is provided by this research. The duckweed plant was taken from agricultural drainage in the Sharqia governorate of Egypt, while *Chlorella sorokiniana* was isolated from a fish culture pond. They were grown with varying amounts of aquaculture wastewater (AWW)—25%, 50%, 75%, and 100%. The most effective method for eliminating NO_3^-, NH_4^+, and TP was the 100% AWW treatment, according to the study's findings. Removal efficiencies of 92.1%, 73.2%, and 54.7% were attained with the usage of *Chlorella sorokiniana*, respectively. Although the removal efficiencies of duckweed were 83.2%, 39.3%, and 77.5%, Moreover, *C. sorokiniana*, which was cultivated in 100% aquaculture effluent, had a protein level of 24%, a carbohydrate content of 36.8%, and a lipid content of 22.8%. Duckweed grown in aquaculture effluent only had a protein level of 26.1%, a carbohydrate content of 17.6%, and a lipid content of 19.3%. To describe fatty acid profile, the gas chromatography-mass spectrometry (GC-MS) approach was used. Fatty acid percentages for *C. sorokiniana* growing in 100% aquaculture effluent were 15.6% PUFS, 23.8 MUFAs, and 60.6% SFAs. Cis-10-pentadecylic acid and arachidic acid make up the majority of fatty acids. *C. Sorokiniana* methanolic extracts Compared to ethyle acetate extract, ethyle acetate extract has more potent antibacterial activity against *Aeromonas hydrophila* and *Pseudomonas sp.*

Keywords: Aquaculture effluent, duckweed, *Chlorella sorokiniana*, remediation

11. Antimicrobial Activity of Marine Derived Fungi Isolated from Soft Corals

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Abstract:

Marine environment is immensely complex and home to a wide variety of life forms. The water column of the ocean contains around 106 microorganisms per milliliter. Physiologically active chemicals found in marine bacteria and fungi are unusual and numerous, which makes them highly interesting. Over the past few decades, there has been a gradual increase in the amount of secondary metabolites from marine bacteria and fungi that have been reported. Drug-resistant bacterial infections, especially those involving several drug-resistant strains, have become more common due to overuse of antibiotics, and an increasing proportion of drug-unresponsive infectious disease agents is a serious threat to the world's healthcare system. From Red Sea water samples in the form of water, soil, swabs and small pieces from the studied three soft corals were collected. The fungal isolates were isolated from these four different types of samples. Antagonistic activity test was applied between fungal isolates against the two pathogenic bacteria (Pseudomonas aeruginosa ATCC-9027, Staphylococcus aureus ATCC-6538) and the diameter of inhibition zone determined. The crude extract of four chosen fungal isolates has been obtained by cultivation of the fungi on PDB broth medium for 15 days. The crude extract was tested for antibacterial activity against pathogenic bacteria. our study revealed various marine fungi from different soft corals species, the foremost report of different Aspergillus sp. The result demonstrate that these marine fungi serve as potent producers of antibacterial secondary metabolites. It also evident that they can serve as potential antibacterial mediators against pathogenic bacteria.

Keywords: Soft corals, Marine fungi, Secondary metabolites, Antibacterial activity.

12. Screening of Soil Actinomycetes Ability to Biosynthesis Zinc Oxide Nanoparticles

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Abstract:

The study aimed to explore the biotechnological potential of actinomycetes in the synthesis of zinc oxide nanoparticles (ZnONPs) through the assessment of their ability to form a white precipitate and the detection of ultraviolet (UV) peaks. Twenty actinomycete isolates were screened, and their responses were evaluated based on the intensity of white precipitate formation (+++ for intense, + for mild, - for absent) and the presence or absence of UV peaks related to ZnONPs. The results revealed diverse behaviors among the isolates, with notable variations in both white precipitate formation and UV responses. Isolates like S13, S17, and S292 demonstrated intense white precipitate formation along with positive UV responses, suggesting a potential relationship between their ability to reduce zinc ions and ZnONP synthesis. However, isolates such as S392 and S41, despite forming intense white precipitates, displayed negative UV responses, indicating the presence of additional factors influencing ZnONP formation. These findings underscore the complexity of the biochemical pathways involved in metal ion reduction and nanoparticle synthesis by actinomycetes. The study provides valuable insights into the biotechnological applications of actinomycetes in nanomaterial synthesis and environmental remediation. Further investigations into the underlying mechanisms can enhance our understanding and pave the way for sustainable and eco-friendly technologies.

Keywords: Zinc oxide nanoparticles, Biosynthesis, Actinomycetes, Isolation, Nanotechnology.

13. Exploring the Biotechnological Potential of Marine Sponges: Insights into Endophytic Microbial Diversity, Fungal Biosynthesis of Copper Nanoparticles, and Antimicrobial Properties

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Abstract:

This article presents findings from a study on marine sponges collected from two sites in Hurghada, Red Sea, Egypt, aiming to understand the ecological dynamics and distribution of sponges in the region. The samples, including SA1, SA2, and SA3, were collected at varying depths from different sponge species at distinct sites. This information contributes to our understanding of marine ecosystems in the Red Sea. The study isolated endophytes from these sponges, revealing a diverse array of microbial communities. Particularly, the endophytes from SM1, SM2, SM3, SM4, SM5, SS2, SS3, SN11, SN12, and M56 exhibit potential for biotechnological applications. Sponges host unique microbial communities, potentially biotechnologically relevant. Fungal filtrates, like SM4, successfully synthesize Copper Nanoparticles, enhancing understanding of fungal strains proficient in nanoparticle biosynthesis. Morphological and microscopic examinations of Aspergillus sp. help identify and characterize the fungal genus. Different species are distinguished by colony and structure features. Copper nanoparticles show moderate antibacterial activity against *Staphylococcus aureus* and *Escherichia coli*, with potential for antifungal agents in medical and healthcare settings.

Keywords: Marine Sponges, Endophytic Fungus, Microbial Diversity, Copper Nanoparticls, Antibacterial, antifungal

9. Chemistry:

14. Synthesis, Characterization and Modelling Studies of Some Transition Metal Complexes with Mixed Chelating Drugs

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Abstract:

The solid complexes formed between Mn2+. Fe3+, Ni2+, Cu2+, Zn2+ and VO23+ with Enrofloxacine-L-Ascorbic acid (Enro-Asc) and Levofloxacine-L-Ascorbic acid (Levo-Asc) as mixed drugs were prepared in the solid state. The chemical structure of the synthesised complexes were elucidated using different chemical and physical techniques which proved the formation of complexes with stoichiometric ratios Enro:Asc:M and Levo :Asc:M (1:1:1). Elemental analysis and molar conductivity showed satisfactory agreement between the proposed and found formulae, while IR and electronic absorption spectra proved the mode of bonding and the expected d-d transitions within the metal ions. Some quantum chemical and energetic parameters of the free drug and their metal complexes were calculated using DMOL3 program shaped for wide scale Density Function Theory (DFT). Molecular modeling software calculation provided graphical images of electron charge density by representing the presence of high or low electron density in a particular position of molecules. The total density, Deformation density and 3D plots frontier orbital energies using DFT method for free drugs and their mixed complexes were determined.

Keywords: mixed chelating drug metal complexes, Levofloxacine, Enrofloxacine, L-Ascorbic acid

15. Effect of metal doping on the Physical Properties of Tio2 Nano Particle Prepared by Eco - Friendly Method

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Abstract:

In this study, TiO_2 and metal ion-doped TiO_2 nanoparticles (M = Fe, Cu, Zn and Zr) were successfully synthesized by the green route using the co-precipitation technique in which titanium tetraisopropoxide (at 5.0 mM concentration) was used as a precursor and the pomegranate peel extract was used as a bio-reductants. The as-prepared nano particles were characterized by different techniques (EDX, XRD, FTIR and TEM). The main goal is to study the effect of the doping cation on the structural and photocatalytic properties of titanium dioxide. The different doping nano particles were compared for improving the photocatalytic activity of titanium dioxide. The XRD results, showed that doping of the metal ion in the crystal lattice did not change the high crystallinity of the TiO_2 structure, and all the metal ions were incorporated into the structures of titania as well as replaced titanium ion or located at interstitial site. The main goal is to study the effect of the doping cation on the structural and photocatalytic properties of titanium dioxide where it was found that the doping process leads to an improvement in the catalytic activity of TiO_2 NP by decreasing its gap energy from 3.53 Ev in TiO_2 NP to 1.61,1.65 and 1.8 ev for Fe, Cu and Zr doped NP, respectively allowing its use in the visible region of light rather than in the ultraviolet region.

Keywords: Dopping TiO_2 Nano Particles, Green Chemistry**,** Pomegranate Peel Extract,

10. Geology:

16. Remote sensing-based lithological mapping of the central Qena-Safaga Shear Zone juxtaposing Northern and Central Tectonic Provinces of the Egyptian Nubian Shield

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Abstract:

Integration of remote sensing data (Landsat- 8, ASTER, and Sentinel 2A) with field and petrographic studies is utilized to update the lithological/geological mapping of the central Qena-Safaga Shear Zone that juxtaposes the Northern Extensional Province against the Central Transpressional Province of the Egyptian Nubian Shield. The Neoproterozoic basement succession in the study area is classified into ophiolitic mélange, syn- tectonic granitoids, late- tectonic granitoids, Dokhan Volcanics and post- tectonic granitoids. These rock suits are dissected by NE-SW oriented dikes and NE-SW and NW-SE trending strike-slip faults. A number of remote sensing techniques (e.g., False Color Composites; FCC, Band Ratios; BR, Principal Component Analysis; PCA and Image Classification) were applied in the verification of the exposed litho-units. The FCC (RGB 7 5 3 for Landsat- 8 and 10 11 6 for Sentinel 2A), PCA (RGB 1 2 3, 3 2 1 and 6 4 3 for Landsat- 8; RGB 6 5 7 for Sentinel 2 A; and RGB 1 2 4 for ASTER), BR (RGB 4/3, 6/7, 6/5 for Landsat-8; and RGB 1/3, (5/3/+ ½), 5/7 for ASTER) and Supervised Classification including parallepiped method and Maximum Likelihood for Sentinel 2A are effective remote sensing techniques in rock discrimination. Besides, some alteration zones were recognized including phyllic (muscovite, b7/b6 for ASTER), ferrous silicates (chlorite, b5/b6 for Landsat-8), carbonate (calcite, b6/b7 for Landsat-8), kaolinite (b7/b5 for ASTER) and hydroxyl group (alunite, b4/b5 for ASTER). Such alterations exhibit bright pixels depending on the DN band threshold (DN band threshold= mean + 2* standard deviation).

Keywords*:* Qena-Safaga Shear Zone, Landsat-8, ASTER, Sentinel 2A, Mineral indices, Egyptian Nubian Shield

17. Structural mapping and kinematic history of the central Qena-Safaga Shear Zone (Egyptian Nubian Shield, East African Orogen)

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Abstract:

The Qena- Safaga Shear Zone (QSSZ) is a megashear belt separating the Northern- and the Central- Tectonic Provinces of the Egyptian Nubian Shield (ENS). Processing of remotely sensed data of the Landsat-8, ASTER, and Sentinel 2A, accompanied by field/structural investigation made it possible to construct a plausible structural map for this high strain zone. A wide variety of Neoproterozoic litho-units outcrop in the area, including ophiolitic mélange, syn- tectonic granitoids, late- tectonic granitoids, Dokhan Volcanics and post- tectonic granitoids. Dike swarms' traverse some of these units. The automatic lineament extraction using SRTM and PALSAR images verified that the dominant structural trend is the NE-SW. Other trends, comprising E-W (to ENE-WSW), NW-SE (to NNW-SSE) and N-S (to NNE-SSW) are also recognized. The main structural elements documented in the area embrace foliations and lineations, faults and shear zones, as well as shear zone-related structures (e.g. folds, duplexes, and flower structures). The obtained results are significantly contributed to our knowledge on the high strain shear belts in the ENS.

Keywords*:* Qena- Safaga Shear Zone, SRTM/PALSAR data, Shear Zone-Related Structures, Dokhan Volcanics

Scientific Sessions

Topics of Agriculture & Veterinary Medicine Science

11.Soils and Water Science:

1. Influence of Nano-silica foliar application on growth and yield of Maize (Zea mays L.) under drought stress condition

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Abstract:

Nano-silica and micro silica powders were tested on maize plants. Silicate nanoparticles (SNPs) were applied by foliar application at different concentrations under field conditions. The basic parameters such as stem height, stem width, grain yield, and grain nutrient content were determined. SNPs enhanced all aspects. Since SNPs achieved significant values of morphological, grain yield and grain component higher than other treatments especially low levels of foliar application of SNPs. Different plant characteristics measured wasn't affected by the ration of irrigation water when treated with foliar application of SNPs. We recommend to useing foliar application of SNPs especially when plant was suffering from stress condition of drought.

Keywords: Nano-silica, Water Stress, Maize, Foliar Application, Drought.

2. Potential effect of Plant Growth-Promoting Rhizobacteria (PGPR) on Wheat (*Triticum aestivum* L.) Under Salinity Stress

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Abstract:

The aim of this paper to investigate the influence of *Azospirillum brasilense*, *Bacillus cereus*, *Pseudomonas fluorescens*, *Bacillus subtilis*, *Azospirillum lipoferum*, and *Enterobacter cloacae*) on the yield and growth of two wheat varieties, namely Misr 1and Sakha 95, which were cultivated on saline clayey soil. The experiment contained four treatments for each variety (T1(control), T2(*Azospirillum brasilense* and *Bacillus cereus)*, T3(*Pseudomonas fluorescens* and *Bacillus subtilis*), and T4(*Azospirillum lipoferum*, and *Enterobacter cloacae*). The results show that Sakha 95 had higher growth and yield than Misr 1. Moreover, the used groups of PGPR significantly increased the yield and growth parameters of wheat plants. The highest plant length, spike length, spike number, the weight of 1000 grains, straw yield, and grain yield (77.95 cm, 9.67 cm, 16.14 spike, 43.5 g, 27.28 g/pot, and 19.18 g/pot, respectively) were recorded with T3 (*Pseudomonas fluorescens* and *Bacillus subtilis*) application. The interaction effects of wheat varieties and PGPR on the above-mentioned parameters, indicated that the highest plant length, spike length, spike number, weight of 1000 grains, straw yield, and grain yield were observed in Sakha 95 with application of T3 (*Pseudomonas fluorescens* and *Bacillus subtilis)* compared with Misr 1 and the control. Salt-affected soils inoculated by *Pseudomonas fluorescens* and *Bacillus subtilis* enhance the growth and reduce the cost of wheat production.

Keywords: Wheat, PGPR, Growth parameters, Yield, Saline soil.

3. Determination of some Heavy Metals in Soil and Guava Plant at Rosetta Egypt

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Abstract:

The uptake of heavy metals is the main topic of this study. Find out how much lead, cadmium, and other heavy elements are in the soil and guava trees in Rosetta. Therefore, this study's goal is to ascertain the concentration of heavy metals in the guava's fruits, leaves, stems, and roots as well as in the soil cultivar Psidium guajava L. The research was conducted in Rosetta, Egypt. Atomic absorption spectroscopy was used to determine the presence of heavy metals in soil and plant parts. It was found that the soil was poor in copper and the concentration of heavy metals in the soil was generally low. It did not reach the level of toxicity. Cadmium was found in the leaves of the plant. Nickel was also found in all plant parts examined and its percentage varied from 1.2 to 22.4 mg/kg. Agricultural soil contains a percentage of lead. Lead was found in the roots of plants, while manganese was found in all its parts. Copper, iron and zinc have also been found in all parts of the guava plant. In conclusion, the concentrations of heavy metals in both soils and Rosetta guava were so low that they did not cause toxicity to the plants and did not exceed the critical limit.

Keywords: Heavy metals, soil, guava, plant, Rosetta

12. Agriculture Botany:

4. Improvement of squash plants growth growing under cold stress conditions by using calcium and phosphorus forms

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Abstract:

Two pots experiments were carried out at Experimental Station of Agricultural Botany Department, Faculty of Agriculture, Moshtohor during 2020 and 2021 seasons on squash plant cv. Eskandarani. Seeds of squash were soaked and foliar spray with calcium at 250 & 500mg/l, nano calcium at 50 & 100mg/l, phosphorus at 250 & 500 mg/l, nano phosphorus at 50&100 mg/l and distilled water (control) to evaluate the effect of treatments on vegetative growth, photosynthetic pigments, anatomical characteristics (out-doors pot experiment) of squash plants **(*Cucurbita pepo* L.)** grown under natural cold stress conditions. Foliar application of squash plants with the previous treatments gave the highest values of vegetative growth of roots (size, length, diameter, fresh and dry weights), stems (length, diameter, fresh and dry weights) and leaves (number, total leaves area, fresh and dry weights), photosynthetic pigments compared with the control especially, nano phosphorus at 50 mg/l followed by nano calcium at 100 mg/l. For the anatomical characteristics, results revealed that different anatomical characteristics of squash roots and stems were improved positively. Also, the most traits of squash anatomical features were increased with different applied treatments. Generally using nanoparticles can be applied to increase squash growth and productivity under cold stress conditions.

Keywords: Squash plants, cold stress, calcium, phosphorus, vegetative growth, photosynthetic pigments and anatomical characteristics.

5. Response of common bean (*Phaseolus vulgaris* L.) plant to foliar spray with some growth activators

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Abstract:

Two field experiments were conducted at the experimental Farm Station of Hort. Faculty of Agriculture Moshtohor, Benha University, Qalubia Governorate, Egypt, during the seasons of 2022 and 2023 This study aimed to investigate the effect of foliar spray with some growth activators i.e., benzyladenine at 25 and 50 mg L^{-1}, milagrow at 50 and 100 mg L^{-1}, yeast extract at 50 and100 ml L^{-1} as well as lithovit at 250 and 500 mg L^{-1} on growth, chemical composition, anatomical features as well as yield characteristics of common bean plant.The obtained results indicated that, significant increases existed in many growth characteristics and bioconstituents level such as photosynthetic pigments, phytohormones, minerals, total carbohydrates as well as crude protein %. Also, results showed that applied treatments enhanced anatomical features of common bean plant. Moreover yeast extract at 100 ml L^{-1} and milagrow at 100 mg L^{-1} treatments caused significant increases in flowering and yield characteristics i.e., number of flowers $plant^{-1}$, number of setted pods $plant^{-1}$, pods yield $plant^{-1}$, weight of seeds pod^{-1}, 100 seeds weight, weight of seeds (g) $plant^{-1}$ in the two growing seasons which were the most effective treatments in this respect compared with control and the other used treatments. Generally, it could be recommended to spray common bean plants using growth stimulators such as yeast extract at 100 ml L^{-1} or milagrow at 100 mg L^{-1} to improve their growth, productivity and quality.

Keywords: Common bean, benzyladenine, milagrow, yeast and lithovit.

13. Plant Protection:

6. Efficacy of *Eucalyptus citradora* (Hook.) extract against the peach fruit fly pupae, *Bactrocera zonata* (Saund.) (Diptera: Tephritidae)

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Abstract:

The peach fruit fly (PFF), *Bactrocera zonata* (Saunders) (Diptera: Tephritidae), is one of the most invasive and economically significant pests in Egypt for a variety of fruits in temperate, tropical, and subtropical regions. The efficacy and the latent effect of *Eucalyptus citradora* (Hook.) extract on the newly formed pupae of *B. zonata* were assessed. Results indicated that the efficacy of *E. citradora* extract increased as the applied concentration increased. The highest concentration of the *E. citradora* extract (2.5%) had a significant effect and caused high mortality among pupae reaching 92% and the LC_{50} = 2.20. The investigations showed inhibition in the feeding ability, delaying sexual maturity and eggs hatching rate. On the other hand, the histological sections showed a change in inner tissues such as the basement membrane of the midgut which was destructed. Also, sections in the female reproductive system showed mal-developing oocyte chambers before sexual maturity, shrank oocytes, and degenerated leaving vacuoles after sexual maturity. Also, cross sections in testis showed mild reduction of spermatogenesis series.

Keywords: Bactrocera zonata, Eucalyptus essential oil, midgut, reproductive system, Biological control.

7. Controlling Greater Date Moth *Arenipses sabella* Hamp. [Lepidoptera: Pyralidae] using Combine Controlling Methods (IPM approach) Comparing to Chemical Control at El-Baharia Oasis, Egypt

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Abstract:

Date palm trees *Phoenix dactylifera* L. is an essential tree all over Egypt, especially in Oases were the main clusters for variety as siwe which is the main source for income there. With expansion of planting of palm filed for producing with more quality and quantity for local market and exporting, which facing many challenges, one of them is pests infesting date palm fruit led to losses in the yield like Greater Date Moth (GDM) *Arenipses sabella* as it causes up to 30% losses. It infects flowers, newly formed fruits, and fully mature fruit (Tamr). The experiment carried out at El-Baharia Oasis studying using combine of controlling measures (IPM) comparing with chemical control for controlling GDM population with environmental sustainability and safe production. The paper exam palm leaves/ bunches, fallen dates for larva, and light traps for adults. Using sequences of agriculture practices – natural enemies – bio-pesticide to see how it reduces the population compared with the common chemical pesticide used in the palm orchards. This IPM gives a reduction in population density almost like using chemical control. Reduction for infestations from 5 – 7% in bunches, %37 – 40% in fallen dates, and 8 – 9% in light traps to 0 – 1% in bunches, 3 – 4% in fallen dates, and 2 – 7% in light traps at the second year of treatment. From the obtained results applying the combine program as shown in the experiment for safe dates and keeping the stainability of the environment.

Keywords: Date palm, *Phoenix dactylifera*, Greater Date Moth, *Arenipses sabella*, IPM, Agriculture practices, Bio-pesticides, Natural enemies, *Trichogramma* sp., Chemical pesticide, Chlorpyrifos, Phosphorus.

8. Comparative Effects of Microwave Energy and Gamma Radiation on the red flour beetle, *Tribolium castaneum* (Herbst) (Coleoptera: Tenebrionidae)

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Abstract:

The rust flour beetle, *Tribolium castaneum* (Herbst) (Coleoptera: Tenebrionidae), is the most prevalent pest in stored food for human and animal consumption. The current study was conducted to determine the efficacy of microwave energy and gamma radiation on *T. castaneum* larvae, pupae, and adults. Microwave was applied with exposure times of 30, 60, 120, 180, 240, and 300 sec. at the powers of 180, 300, and 450 W. In addition, gamma radiation was applied at a dosage of 200, 400, 600, 800, and 1000 Gray. Mortality percentage was recorded after 1, 2, 3, 4, 7, and 10 days, and LD_{50} was recorded after 7 days of treatment. The results indicated that mortality of *T. castaneum* increased with increasing doses and exposure time. The mortality of *T. castaneum* increased, reaching 100% at power levels of 300 s and 450 W. The LT_{50} and LT_{90} decreased as power levels and exposure time increased. Moreover, the dosage of 1000 Gy caused 85.0 and 65.0% mortality after 7 days of irradiation for larvae and adult stages. The required dosage of gamma radiation to kill 50% (LD_{50}) of adults after 7 days was 580.1 Gy. Therefore, the use of microwave energy and gamma radiation is a very important alternative method to protect stored grains and their products against *T. castaneum*.

Keywords: wheat flour, stored products, insects, microwave heating, gamma irradiation.

9. Efficiency of ECO_2-Fume Fumigant and Ozonation against the red flour beetle, *Tribolium castaneum* (Herbst) (Coleoptera: Tenebrionidae)

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Abstract:

Wheat, a staple food in Egypt, is severely damaged by insect pests, particularly the red flour beetle, *Tribolium castaneum* (Herbst), when stored in bulk quantities. The current study was conducted to determine the efficacy of ECO_2-Fume fumigant (mixture of phosphine and carbon dioxide) and Ozone gas concentrations on *T. castaneum* different stages. The ECO_2-Fume fumigant was at concentrations of 30, 35, 40, and 50 g/m^3, with exposure for three days. After three days of application ECO_2-Fume gas the mortality rate was 80.06, 85.6, 76.7, and 82.2% for eggs, larvae, pupae, and adults, respectively when applied at a rate of 40 g/m^3. The mortality rate was 100% for previous stages respectively when applied at a rate of 50 g/m^3. Application of Ozone gas in this experiment were 500 ppm for at ten different exposure times of 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 hours. The mortality percentage increased gradually by increasing the exposure time after treatment. The LT_{50} and LT_{90} to Ozone gas against *T. castaneum* larvae to 500 ppm were 0.07, and 1.75 days; and it was 0.19 and 6.22 days for adult. Therefore, the use of ECO_2-Fume fumigant and Ozone gas is a very important alternative method to protect stored grains and their products against *T. castaneum*.

Keywords: wheat flour, stored products, insects, fumigant, ECO_2-Fume, Ozone gas.

14.Biochemistry:

10. Effect of Plant Density and Drought Stress on Seed Productivity and Biochemical Composition of Faba Bean Plants

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Abstract:

Two field experiments were conducted at the Research and Experiment Centre, Faculty of Agriculture, Moshtohor, Benha University, Qaluibia Governorate, Egypt, during two growing winter seasons (2022–2022) to investigate the effect of four different water regimes, namely one, two and three irrigations, as well as conventional irrigations (four regular consecutive irrigations as a controller) applied at all vegetative and reproductive stages, and three different plant densities (20, 30 and 40 kg/ kg/fed), of faba bean (Cv. Marriott 2). The collected results demonstrated that plant density had a significant impact on various features, throughout the winter growing season (2021/22).The contents of nitrogen, crude protein, phosphorus, potassium, carbohydrates contents and the total seed storage protein dramatically increased when plant density was increased except calcium content. During the winter growing season, all traits aside from the potassium and calcium contents—were significantly impacted by interactions (2021/22). Overall, the faba bean (Cv. Marriott 2) was presented in a respectable manner, and the findings demonstrated that different plant densities and water regimes had different chemical compositions. Crop composition may be slightly delayed by a water shortage (three irrigation treatments) of up to 75% of the water holding capacity; however, this does not limit the crop's ability to react to irregularities in its chemical composition. Additionally, in every attribute evaluated, faba beans performed well at the most advantageous plant density of 30 kg/fed+ three irrigations.

Keywords: Water Stress, Plant Density and Faba Bean.

11. Tolerance of Faba Bean Plants to Drought Stress and Plant Density via Yield Components and Pathogenicity Tests

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Abstract:

This study examined the effects of water stress and plant density on faba bean plants. It was carried out in the Research and Experimental Centre, Faculty of Agriculture, Moshtohor, Benha University, Qaluibia Governorate, Egypt, over the course of two growing winter seasons (2022–2023, 2022–2023).Therefore, two field studies were conducted to investigate the effect of four different water regimes one, two, and three irrigations as well as conventional irrigations four regular, consecutive irrigations as a control applied at all vegetative and reproductive stages and at three plant densities of faba bean (Cv. Marriott 2) 20, 30 and 40 kg/fed. As compared to the growth metrics of the unstressed plants, the results demonstrated that an increase in the duration of water stress caused a drop in all growth parameters. Plant density also significantly affected a number of aspects throughout the two growing winter seasons (2022–2022, 2022–2023).The majority of the features were considerably impacted at the interaction level. While there were differences in the values of vegetative growth parameters, yield, and yield components, as well as in microbiological analysis with different water regimes and plant densities, the overall presentation of the faba bean was generally well-intentioned. The crop composition may be slightly delayed by a water deficit (three irrigation treatments) up to (3/4) of the water holding capacity, but this does not limit the crop's ability to adapt to anomalies in its growth composition. Additionally, in every attribute evaluated, faba beans performed well at the most advantageous plant density of 30 kg/fed.

Keywords: Water Stress, Plant Density And Faba Bean.

12. Comparative Study between Mushroom-extracted and Commercial Lectins: Impact of Immune Response to H5N1, NDV, and IBD Vaccines in Broiler Chicken

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Abstract:

This study's objective was to look into the impact of lectin on the immune response to live and inactivated vaccines of Avian influenza, Newcastle disease virus, and Gumboro in broiler chicken. Moreover, a comparison between mushroom-extracted lectin and commercial lectin is investigated. Accordingly, 100 broiler chicken were divided into 4 groups each one consisting of 25 chicken: the first group is -ve control, and the second one was treated with extracted lectin only. Followed by a third group, which is treated with commercial lectin only. Finally, the fourth group was treated with both extracted and commercial lectins. The vaccination program was VAXXITEK® HVT+IBD in the hatchery, then ValleyVac® Penta-Pro injection on the sixth day, and Nobilis® Gumboro 228E on the 16th day in drinking water. Lectin dose is 0.25 ml/L of drinking water for 2 days before live vaccines and 2 days after inactivated vaccines. After that, samples were collected before and after 48 hrs lectin administration in case of Infectious Bursal Disease (IBD). Otherwise, samples were taken 48 hrs before and 10 days after lectin administration in case of Highly Pathogenic Avian Influenza (H5N1) and Newcastle Disease Virus (NDV). Then, 3 samples from each group in each measurement are extracted for testing. The results obvious that there is no change in immune response in four groups to the Newcastle vaccine before and after lectin, indicating no effect of lectin on NDV immunity. Additionally, the titre of avian influenza after lectin administration is the same as before lectin, indicating no effect of lectin on H5N1. On the other hand, there is a superior impact of mushroom-extracted lectin on the immune response of IBD that the antibodies titre of the extracted lectin increased four times rather than the commercial lectin.

Keywords: Volvariella Volvacea lectin, Newcastle Disease Virus, Infectious Bursal Disease, Avian Influenza.

15. Food Hygiene and Dairy Science:

13. Physicochemical, Microbiological, And Sensorial Attributes of Rice bran or Soybean Oils Substituted Probiotic Soft Cheese Fat

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Abstract:

The present study was conducted to substitute cheese milk fat with soybean [represent the low-cost product] or rice bran oils [represent the expensive product], at a level of 25, 50 and 75%, besides to full fat control cheese [5% fat]. The experimental cheese samples were stored at 5±1ºC for three months, and chemically, microbiologically, and sensory evaluated at intervals of 0, 15, 30, 45, 60 and 90 days. The obtained results revealed that the substitution with 75% Rice bran oil treatments recorded the highest score points followed by 75% soybean oil. So, it was possible to produce 75% soybean oil substituted soft cheese [low-cost products] nearly with the same properties of the expensive cheese substituted with rice bran oil. Both soybean and rice bran oil substituted soft cheese fat were more preferred than the control and represent the shift toward reduced-fat or cholesterol-free, higher antioxidants, dietary fiber and phytoconstituents. Moreover, the health benefits of substituting cheese milk fat with such experimental oils.

Keywords: Soft cheese, Rice bran oil, Soybean oil, Probiotics

14. Safety evaluation of some retailed chicken meat products in relation to their antibiotic residue in Egypt

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Abstract:

The demand for poultry meat and eggs has expanded in Egypt, which has led to the intensification of agricultural practices and the usage of antimicrobials, especially sulfonamides and tetracycline. Consumer health is put at risk, according to the FAO/WHO Codex Alimentarius committee, when antimicrobial residue concentrations in food surpass the maximum residual level. Therefore, the present study was conducted to investigate the incidence of tetracycline and sulfadimidine residues in a total of ninety random samples of chicken meat, liver, and gizzard (30 of each) samples, which were collected from Benha city, Qalubiya governorate, Egypt by the mean of high-performance liquid chromatography technique. Results revealed that a total of 48.8% of the examined samples were positive for antibiotic residue. Out of the examined samples 20, 33.3 and 40% of the examined meat, gizzard and liver samples were positive for tetracycline residue with a mean value 116.9, 488.6 and 609.5 ppb; while sulfadimidine was detected in 13.3, 16.7 and 23.3% of the same examined samples with a mean value of 59.2, 97.6 and 144.9 ppb, respectively. Referring to the obtained results, liver samples showed the higher residual rates, followed by gizzard and meat samples, respectively. Furthermore, it is highly recommended to conduct a strict monitoring measure over the poultry rearing farms and retailers to avoid emergence of public health hazards in relation to the antibiotic residues.

Keywords: Poultry meat, Antibiotic residue, Egypt.

15. Existence of Some Synthetic Hormonal Residues in Some Chicken Meat Cuts

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Abstract:

In order to boost meat production in a shorter amount of time, anabolic hormone growth promoters have been utilized extensively in chicken husbandries. However, if administered improperly or for an extended period of time, they may possess a serious risk to the consumers' health. The goal of the present survey was to ascertain whether the ninety randomly selected samples of chicken breast, thigh, and wing (each comprising thirty samples) contained any synthetic hormone growth promoters, specifically 17-estradiol and zeranol residues using ELISA assay. The samples were collected from different selling points of Shebin elkom markets. Thigh samples had greater residual amounts of 17-estradiol than wing and breast samples, with mean values of 0.58, 0.42, and 0.27 ppb for each, and a total incidence of 8.9%. In the meantime, zeranol was found in 7.8% of the samples that were tested, with mean values of 0.21, 0.09, and 0.07 ppb, respectively. Based on the indicated MRL in the Codex Alimentarius Commission, all of the analyzed samples were deemed fit for human consumption, provided that acceptable animal husbandry methods were followed. Since the use of these hormones in chicken farms seems to be harmful to the general public's health, it is important to routinely monitor food quality by looking for chemical residues.

Keywords: Chicken meat products, Anabolic hormones, Growth promotors, Hormonal residues.

Scientific Sessions

Topics of

Engineering, Computer and Technology Science

16. Mechanical Engineering:

1. A Hybrid Multibody System Algorithm Used in Modeling Delta Robot Mechanisms

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Abstract:

Delta robot as a parallel mechanism has been gaining widespread attention. In recent years, researchers have been focused on the construction of serial structured robots. However, few researchers tried to evolve the delta robots in such a system. This study attempted to simplify the delta robot mechanical structure to obtain a kinematically driven Multi- body System Dynamics (MBS) model. The simplified model preserves lower computing costs and faster response than the typical MBS model to be applied in real-time control applications. The simulation results of the simplified MBS model were compared with the results from the typical MBS model of the whole system and the loop closure method, both of which were identical to each other and different from the simplified MBS model. The same motion behavior of the end effector was obtainable using the simplified MBS model and was the same as the realistic behavior. The simplified MBS model created in this study can describe the kinematics of the delta robot, which has prosperous prospects in dynamics, control, and design optimization of the robotic field.

Keywords; Delta robot; MBS Modeling; System Dynamics.

2. Using Evaporative Cooling to enhance thermal comfort conditions in Semi-open Areas.

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Abstract:

The rising global temperatures and increased frequency of heat waves have made it crucial to address the need for effective cooling solutions in semi-open spaces, such as outdoor cafes, large atriums with open ends, stadiums, prayer areas and public transportation waiting areas. The combination of the pedestal fan and mist water spray was introduced to explore the potential of utilizing evaporative cooling as a sustainable and cost-effective method for reducing ambient temperatures within such environments. The experimental study is conducted in a real semi-open environment and the data collection involved air velocity, air temperature, and relative humidity. Two different nozzle configurations were used to define the appropriate arrangement of nozzles and their number to maximize the cooling efficiency. The results showed that the axial air velocity during the mist condition decreased compared to that of the dry condition. The eight-nozzle configuration resulted in a greater reduction in air temperature over the four-nozzle configuration. However, an undesirable increase in humidity ratio resulted. A comparative analysis of the mist plate and mist nozzle revealed that the water particles of comparatively considerable size generated by the mist plate tended to fall within a limited distance without undergoing thorough complete evaporation, thereby failing to provide a sufficient reduction in air temperature. In all cases a distance of three meters from the fan is to be avoided to escape the uncomfortable wetting effect in this region.

Keywords: Evaporative cooling; Thermal comfort; Water mist spray; Mist plate.

3. A State Machine-Based Approach for Implementing SPI Communication on FPGAs

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Abstract:

The Serial Peripheral Interface (SPI) is a widely used synchronous serial communication bus that facilitates communication between a master device, and one or more subordinate devices, referred to as slave devices. This article outlines the conceptualization and design procedures of an interface for the SPI communication bus on a Field Programmable Gate Array (FPGA) platform, using the LabVIEW programming environment alongside the LabVIEW FPGA module. The structure and operation of the SPI communication bus are presented, along with its timing structure and four distinct operational modes. The implementation of SPI bus communication on the FPGA is achieved via the use of the state machine methodology. With the state-machine SPI technique, multiple devices can be managed simultaneously through a single port. Additionally, the clock frequency can be adjusted online, making the system adaptable and flexible for different tasks. LabVIEW is used to implement the SPI module circuit, which is then mapped onto the National Instruments Single-Board (NI SbRIO-9631) FPGA board. The L3G4200D gyroscope sensor is used to conduct testing on the protocol and verify the effectiveness of the state machine technique. The results of this study demonstrate the successful implementation of the SPI communication bus interface on an FPGA using LabVIEW and LabVIEW FPGA module. The module exhibits versatility, efficiency, and the ability to communicate with a wide range of devices.

Keywords: Serial Peripheral Interface (SPI), LabVIEW, Serial Communication, FPGA, NI SbRIO-9631.

4. Enhancing the behavior of automatic washing machine using Tuned Liquid Damper TLD

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Abstract:

Washing machines are important category of domestic machines used for automating manual tasks and therefore helping humans over a number of years. In a fully automatic washing machine, an unbalanced mass of clothes in a spin drum can cause excessive vibration problems. Therefore, reduction of noise and vibrations in such high-speed machines is an immense challenge in the present market scenario. The main objective of this study is to reduce the vibrations of domestic Automatic Washing Machines through the use of Tuned Liquid Dampers (TLDs). Tuned Liquid Dampers (TLDs) are passive energy absorbing devices that have been used especially in some flexible, high-rise buildings to control the vibrations. A Tuned liquid damper is water confined in a container, usually placed on top of a building that uses the sloshing energy of the water to reduce the dynamic response of the system when it is subjected to excitation. The sloshing TLD absorbs and dissipates energy through boundary layer friction.

Keywords: Washing Machines, Vibration, Tuned Liquid Damper, Passive Energy, Sloshing Energy, Friction, Balance Ring.

5. Studying the effect of Re-layout considering Lean manufacturing, Availability, and Ergonomics: with case study

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Abstract:

Many companies are trying to improve processes and workplaces. One of ways how to improve it could be re-layout of workshop. Effective re-layout considering lean manufacturing should lead to improvement of flows in manufacturing and improved connectivity of manufacturing departments with the assembly line by achieved takt time. When improving efforts are focused only on handling, material flows, loading, unloading sub assembly result could not be the best global optimum., another aspect of manufacturing, can decrease. For instance, with highly optimized material flow workers have to exert more muscle effort, making movements measured by REBA, which means spending more time doing an activity that has no added value to the final product with ergonomics risk, this should lead us to design or re-design layouts with interest on both material and people flows. This paper deals with this problem and shows a possible way how to manage it, by use of analysis of ergonomics intensity between particular places in workplace. This visualization method can show the most frequent paths and best places for middle area of new layout. Paper also includes a case study from relay out of spin basket shop.

Keywords: *re-layout*, ergonomic, lean, six sigma, risk, REBA

6. Material modeling and design of soft robots

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Abstract:

Soft robots, the robots that are made from soft materials that can retain its shape in normal situations and change it when a pressure or normal force is applied. These robots can be considered one of the most critical topics in robot types. When the material is soft, the movement can't be fully predicted and in fact it causes the robot to have infinite number of degrees of freedom. In this paper, three materials were used to simulate two prototypes. At first, is a single segment of an actuator that can be derived using three inner champers. Using three inner champers movement in all directions can be achieved. Before testing the material in the actual design, a dumble shaped test specimen was made and test to produce stress strain diagram. The test results are then used to produce the test material characteristics that can then be used in simulating the arm behavior in Abaqus Modelling software. Soft robots proved to be more suitable in the case of human interactions in production lines and surgical applications.

Keywords: Robotics, Soft robotics, Soft Materials, TPE, TPU.

7. Development of Eco-Friendly Composites: Lamination Configuration and Addition of Waste Tire Rubber Particles on the Mechanical Performance of Polyester-Fiberglass Composite Plates

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Abstract:

The ever-growing problem of waste tire disposal necessitates the exploration of sustainable solutions. This research investigates the development of eco-friendly composites by incorporating recycled tire rubber particles into polyester-fiberglass laminates. The research focuses on the influence of two key factors: lamination configuration and the addition of waste tire rubber particles, on the mechanical performance of the composite plates, by correlating the lamination configuration, rubber particle content, microstructure, and resulting mechanical properties, the research aims to establish a comprehensive understanding of how these factors influence the performance of the eco-friendly composites. This knowledge will be valuable for optimizing the design and manufacturing processes of these composites for various applications where sustainability and tailored mechanical properties are critical. The results revealed that the inclusion of reinforcements significantly improves the material's performance. Fiberglass enhances its strength, while rubber particles, especially in specific configurations, improve its elasticity and strain resistance – this is confirmed by toughness and fracture strain tests. Notably, impact resistance also increases, making it suitable for high impact applications.

Keywords: Polymer Composites, Polyester-Fiberglass Composites, Mechanical Properties, Recycling, Waste Tire Rubber Particles.

8. Drilling Performance Evaluation of Innovative Waste Tire Rubber-Reinforced Polyester-Fiberglass Laminated Composites

Mohamed Mosaad Fathy A., Tamer Samir Mahmoud, Ibrahim Mousa Ibrahim, Samah Samir Mohamed

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Abstract:

This research delves into the drilling behavior of a new generation of laminated composites. These composites are manufactured using a unique approach: recycled waste tire rubber particles are strategically embedded within a matrix composed of polyester and fiberglass. The core objective of this study is to meticulously assess how incorporating waste tire rubber particles impacts the performance of these composites during the drilling process. A comprehensive analysis is undertaken, meticulously examining factors that can significantly influence drilling, such as delamination, the forces exerted during drilling, and the overall quality of the drilled holes. Furthermore, the investigation explores the influence of various drilling parameters, including the size of the twist drill and the speed at which drilling is conducted. The findings of this research will illuminate the potential advantages and inherent challenges associated with utilizing waste tire rubber as a reinforcing element in polyester-fiberglass composites, specifically within the context of drilling. This work holds significant implications for the future of sustainable composite materials, aiming to achieve a balance between improved machinability and the promotion of recycled waste materials in construction and various manufacturing applications.

Keywords: Hybrid polyester composite – rubber particles – delamination factor – drilling parameters.

17. Basic Engineering Sciences:

9. Solution of Chaotic Oscillator System and Fractional Order Chaotic Oscillator System

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Abstract:

The nonvolatile meminductor and memcapacitor models are used to design a nonlinear chaotic oscillating circuit. There is a system of equations derived from chaotic oscillator which is called chaotic oscillator system. The predictor corrector method is presented by using the help of explicit Adams method and implicit Adams method. The predictor corrector method is proposed for solving a chaotic system of differential equations. A new iterative method is proved using characteristics and some fundamental definition of fractional calculus. The new iterative method is used for solving the chaotic system of fractional differential equations. The domain is divided into smaller domains, and an approximative solution for the whole domain can be obtained by solving iteratively. The simulation results are presented. Output chaotic phases are shown in figures. An analysis of the chaotic oscillator system ’s stability is conducted.

Keywords: chaotic oscillator, Predictor corrector method, Fractional calculus.

10. A Simple Iterative Approach for Some Fractional Order Models of Engineering Applications

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Abstract:

The main topic of this paper is the implementation of an iterative approach based on the LA transformation (LAT) for solving fractional order-partial differential equations (FO-PDEs) offering valuable insights and practical solutions for a wide range of scientific and engineering applications. Several examples are presented, covering a wide variety of physical and mathematical problems. The solution process is explained in a step-by-step manner, depicting how LAT can effectively handle fractional-order derivatives and achieve efficient approximated and analytical solutions. The Caputo operator is utilized to express the fractional-order derivatives. The paper explores various examples involving fractional diffusion equations, fractional Burger's equation, and fractional Navier-Stokes equation, among others. This method ensures convergence towards the exact solution for FO-PDEs and has been validated through the presentation of several examples that demonstrate its accuracy. This study contributes to the advancement of fractional calculus techniques and their utilization in real-world problem-solving scenarios.

Keywords: LA transformation, fractional-order partial differential equations, Integral transform methods, Navier-Stokes equation.

11. An Efficient Speaker Diarization Pipeline for Conversational Speech

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Abstract:

In the domain of audio signal processing, the accurate and efficient diarization of conversational speech remains a challenging task, particularly in environments with significant speaker overlap and diverse acoustic scenarios. This paper introduces a comprehensive speaker diarization pipeline that substantially improves both performance and efficiency in processing conversational speech. Our pipeline comprises several key components: Voice Activity Detection (VAD), Speaker Overlap Detection (SOD), Speaker Separation models, robust speaker embedding, clustering algorithms, and sophisticated post-processing techniques. Beginning with Voice Activity Detection (VAD), the pipeline efficiently discriminates between speech and non-speech segments, effectively reducing processing overhead. Following VAD, the Speaker Overlap Detection (SOD) component identifies segments featuring speaker overlap. Following this, a speaker separation model separate the overlapping speech into distinct streams. A pivotal enhancement in our pipeline is the integration of robust speaker embedding and clustering techniques, which capture and utilize speaker-specific characteristics to improve the grouping of speech segments. Finally, the post-processing stage refines these segments to ensure temporal consistency and improve the overall diarization accuracy. We evaluated our pipeline across multiple benchmark datasets, demonstrating significant reductions in Diarization Error Rate (DER) compared to existing methods. The results affirm the effectiveness of incorporating detailed speaker embeddings and clustering in a diarization system, particularly for real-world conversational speech. This enhanced pipeline offers substantial advancements for applications requiring accurate speaker attribution, such as automated transcription services, meeting analysis, and assistive communication technologies.

Keywords: speaker diarization, speaker separation, voice activity detection, optimization.

12. Photonic Crystal Based Ultra-thin "TM-only" all-optical Logic Gates

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Abstract:

In this study, the authors propose a novel design for all-optical logic gates based on the interference effect methodology of constructing two-dimensional "photonic crystals". The gates consist of ellipse-shaped rods with a 45˚ orientation arranged in a square lattice. These rods are air-filled holes drilled in a Silicon substrate. The suggested structure is engineered to operate with Transverse Magnetic ™ waves, which are defined such that the Transverse Magnetic polarization of light is parallel to the rods of the design while propagating. Numerical simulations demonstrate that the gates successfully meet their targeted truth tables at the communication wavelength of 1550 nm (the commonly used wavelength in optical communication). The design has ultra-small device dimensions of 4x4 μm2, which provides the advantage of high device speed (60~110 fs). Furthermore, our design operates with TM waves, which are challenging to manipulate.

Keywords: Photonic crystals – 'All-Optical' logic gates– TM–ultra-small devices.

13. Human-Based Optimization Algorithms and Their Applications

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Abstract:

A subset of meta-heuristic algorithms known as "human-based algorithms" are motivated by social interaction, human behavior, and problem-solving techniques. This study presents human-based meta-heuristic algorithms along with their benefits, drawbacks, and uses. This work provides an appraisal of the diversity of potential applications in optimization problems, the quick evolution of human-based meta-heuristic ideas, and their coverage towards a unified tissue. The purpose of the paper is to provide a quick overview of many human-based meta-heuristic methods for optimization problem-solving. The Driving Training-Based Optimization (DTBO), Chef-Based Optimization Algorithm (CBOA), Teaching-learning-based optimization (TLBO), Technical and Vocational Education, and Training-Based Optimizer (TVETBO), are among the minimum eleven algorithms that are based on human intelligence. Sewing Training-Based Optimization (STBO), Volleyball Premier League Algorithm (VPL), Election-Based Optimization Algorithm (EBOA), Interior Search Algorithm (ISA), Social Engineering Optimizer (SEO), Human Behavior-Based Optimization (HBBO) and Seeker Optimization Algorithm (SOA). These algorithms mimic the problem-solving strategies humans employ to tackle complex optimization tasks. From simulated annealing to genetic algorithms, HBOAs encompass a diverse range of techniques, each offering unique advantages and applications across various domains. **Subjects**: Meta-heuristics, Algorithms, Human-based algorithms, Mathematical models, Optimization Theory and Computation, Flow chart, Pseudo-Code, Advantages, Limitations, and Applications.

Keywords: Optimization, the Problem of Optimization, Applied Mathematics, Population-Based Algorithms, Stochastic Algorithms, Population Matrix.

18. Civil Engineering:

14. Numerical Study of Circular Transverse Holes Effect on Reinforced Concrete Circular Columns Under Non-Axial Loads

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Abstract:

For most construction works, Engineers have to make holes for various utilities and services with different structural element. Most critical holes are those in Reinforced concrete columns, since the columns are the elements that carries the vertical loads from the floors to the foundation. In the current study A numerical study for fourteen circular Reinforced concrete columns (CRC) with one and two circular transverse holes (TCH) under both of axial and non-axial loads are investigated. The circular RC columns have a diameter of 200 mm, height of 1000 mm, six longitudinal reinforcement steel bars with a diameter of 12 mm, and stirrups with a diameter of 8 mm every 135 mm center- to-center spacing were used. Three-dimensional nonlinear Finite Element Model is conducted using ABAQUS simulia V.6.9 software to investigate the performance of CRC with TCH having an area greater than 30% of column diameter under both of axial and non-axial loads with different holed location, 33%, 40%, 50%, and 67% of height of column. Results indicate a significant reduction in load-carrying capacity due to the presence of transverse holes; a reduction in ultimate strength ranging between30% to 41%For columns subjected to axial load, while between 20% to25%. for columns subjected to non-axial load, depending on the number of holes and their location in the all Specimens. Finally, it was found that the decrease in strength for non-axial loading is much greater than for axial loading, with an average of 30%.

Keywords: ABAQUS, CRC, TCH, Non-Linear, Opening.

15. The effect of Silica Fume and Fly Ash on the Properties of Reactive Powder Concrete and its comparison with High Strength Concrete

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Abstract:

Reactive powder concrete (RPC) is a type of high-performance concrete. RPC eliminates the use of coarse aggregates in the mixture to increase compactness. RPC is composed by materials such as Portland cement (OPC), quartz sand, quartz powder, supplementary cementitious materials, water, superplasticizer, fiber (optional).This research consists of two basic parts. The first part investigates the effects of many parameters on the fresh and mechanical properties of locally cast (RPC). The effective parameters are volume of binder content ratio, water-binder ratio, the type of supplementary cementitious material (silica fume (SF) and fly ash (FA)), and, also, their ratio. These parameters were examined experimentally to evaluate their effect on workability, compressive, tensile, and flexural strength. The second part was concerned with comparing the effects of both mentioned supplementary cementitious materials on (RPC) and high-strength concrete (HSC). The results indicate an obvious decrease in RPC workability and an increase in strength by replacing part of the cement with silica fume. RPC can achieve a high strength when volume of binder content is 60% and silica fume replaces up to 20 % of cementitious materials. The results, also, revealed that RPC workability is improved when a part cementitious material is substituting by fly ash. However, excessive replacement of cement with fly ash leads to a reduction in the strength. Moreover, the results showed that substituting 10% of cementitious materials by fly ash and silica fume improved the compressive strength of RPC by 43% and 36%, respectively, higher than that of HSC.

Keywords: Reactive Powder Concrete, Strength, Silica Fume, Fly Ash, High Strength Concrete.

16. Identification of Optimal Segmentation Parameters for Extracting Buildings from Remote Sensing Images with Different Resolutions

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Abstract:

Remote sensing is now essential across many fields, thanks to advanced techniques and expanding applications. Some objects may share similar geographical conditions but possess varied spectral properties, while others may differ in geographical features but display similar spectral properties. This illustrates that spectral information alone cannot suffice for precise spatial information, thus emphasizing the significance of spatial and contextual information. Measures of homogeneity and heterogeneity frequently assess image criteria, including spectrum, space, texture, shape, size, context, time, and prior knowledge. Therefore, many researchers have shifted their focus toward unconventional methods like Object-Based Image Analysis (OBIA) to extract data from high-resolution images with greater precision. The first step in the OBIA technique is segmentation, which involves dividing an image into relatively homogeneous areas or segments. Selecting appropriate segmentation parameters compactness, shape, and scale is a fundamental stage in the image segmentation process. There is currently a shortage of global models or frameworks for computing scale parameters, as well as a lack of universal methods or algorithms in this area. It is important to note that there is no one-size-fits-all scale for image objects with varying sizes, shapes, and spatial distributions that are present in a scene.

The main objective of this research is to identify the optimal values for the parameters used in image segmentation. Therefore, this research has utilized Worldview-3, Worldview-2, and GeoEye-1 images with varying parameter values to understand the relationship between parameters and image resolution by keeping most variables fixed and using different-resolution images of the same area.

Keywords: segmentation parameter, Multiresolution segmentation, Segmentation.

17. Exploring Best Practices in Machine Learning Approaches for near-shore bathymetry modeling: Insights from the Egyptian Mediterranean Coast

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Abstract:

Many coastal areas, especially in developing countries or those with limited marine activity, lack detailed depth measurements. Past data in these areas may be incomplete or outdated, making it difficult to create accurate seafloor maps. This is important for the preliminary design of coastal structures. This study aims to find the best way to use satellite images and open-source software to create Satellite-Derived Bathymetry (SDB) models. Our approach uses three machine learning algorithms (KNN, RF, MLR) to analyze satellite images of different areas. The images come from open-source databases. We use the closest truth data to the targeted area to train the algorithms to predict the unseen data. Our research shows that using satellite data to measure water depth can accurately determine depths of up to 26 meters. Furthermore, our assessment reveals mean absolute errors averaging 0.78 meters and root mean square errors averaging 1.18 meters, with accuracies exceeding 92.32% for both samples. Random Forest (RF) performed better than KNN and MLR. In the El-Dabaa area, RF performed well with Sentinel-02 and Landsat-08 median value images. The area has rocky cliffs, steep slopes, and strong wave movement. In the El-Arish Area, RF's best results came with median value images from Landsat-08. This area has sandy soil, gentle slopes, and gentle wave movement. Generally, using training data with greater depth variations improves model accuracy. However, using the single Sentinel-2 image for depth detection in El-Dabaa resulted in lower accuracy because of the time lag between band detectors.

Keywords: Satellite Derived Bathymetry; Nearshore; Machine learning; Mediterranean Sea, Open source.

18. Evaluation the performance of Rigid Pavement Modified with admixture of Nano Silica and Glass Fiber: A review

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Abstract:

Durability is an essential component that plays a crucial role in the rigid pavement performance and service life. However, with the rapid growth of traffic loads and climate change, rigid pavement suffers from various distresses, including thermal cracks, freeze-thaw cycles that lead to moisture damage, and chemical attacks. Thus, the researchers applied a novel technique to improve the overall performance of rigid pavement by using different types of additives. Among many kinds of additives, the current study seeks to review the use of Nanosilica and glass fiber in concrete admixtures. Nanosilica is a nanoparticle that acts as a pozzolanic fabric that improves the bonding between debris, while glass fibers are synthetic fibers that offer additional tensile strength and reduce cracking. Flexural strength, compressive strength, and skid resistance tests were conducted in the previous studies to evaluate the performance of modified rigid pavement. Results demonstrated that the rigid pavement modified with Nanosilica improved the compressive strength and moisture resistance compared with the control rigid pavement. Nonetheless, the Nanosilica had a slight improvement in tensile strength. Moreover, the best dosage of Nanosilica in the concrete mixture was from 1% to 3% by weight of cement. Glass fiber has a significant influence on the tensile strength of rigid pavement. The recommended percentage for adding glass fiber is 0.4–1% by weight of aggregate. Finally, adding single additives to rigid pavement is not enough to improve the overall performance. Therefore, it is recommended to use the admixture of Nanosilica and glass fiber in rigid pavement.

Keyword: Rigid pavement, Durability, moisture damage, Nano Silica, Glass Fiber.

19. Electrical Engineering:

19. Inter-Carrier Interference mitigation due to Doppler frequency shift in OFDM System

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Abstract:

Orthogonal Frequency Division Multiplexing (OFDM) systems encounter challenges posed by Intercarrier Interference (ICI). This issue arises when the orthogonality among subcarriers is compromised. Such interference stems from two primary factors. Firstly, Doppler frequency shifts occur in the subcarriers due to relative motion between transmitter and receiver. Secondly, achieving precise real-time synchronization for OFDM frames poses difficulties. This paper proposes two novel approaches to alleviate the variability of the ICI signal caused by Doppler frequency shifts. The first method employs a Fourier-transform-based Maximum Likelihood Estimator (FT-MLE) to gauge the Doppler shift within the channel. The receiver estimates the frequencies of received subcarriers using pilot signal parameters and the strong correlation among subcarriers in the OFDM signal. The second method focuses on reducing the normalized Doppler shift by elevating the OFDM symbol rate.

Keywords: Orthogonal frequency division multiplexing **(OFDM)** - Doppler frequency shift **(FD)** Maximum likelihood estimator **(MLE)** - Inter-carrier interference **(ICI)** - Inter symbol interference **(ISI).**

20. Computer Science:

20. Image Steganography Based on PVD and Knight Tour Algorithm: A Combined Approach

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Abstract:

Indeed, achieving high hiding capacity (HC), imperceptibility, and security are crucial challenges in image steganography. A hybrid approach combining the Knight tour algorithm and Pixel Value Difference (PVD) has been proposed to address these challenges. The Knight tour algorithm, known for its ability to traverse a chessboard without repeating squares, is utilized in conjunction with PVD. This combination likely allows for efficient and secure embedding of data within the image. Experimental results indicate that this hybrid technique achieves a high Peak signal-to-noise ratio (PSNR), which indicates good image quality and minimal distortion. Additionally, it demonstrates strong security, implying that the embedded data is well-hidden and resistant to detection. By leveraging the strengths of both the Knight tour algorithm and PVD, this hybrid approach appears to provide a promising solution that balances hiding capacity, imperceptibility, and security in image steganography.

Keywords: Data Hiding, Pixel Value Difference (PVD), Knight tour algorithm, High Embedding Capacity, steganography.

21. Advancing Arabic Scientific Text Analysis: Evaluating Machine Learning Models for Named Entity Recognition

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Abstract:

The task of named entity recognition in Arabic text, particularly within the scientific and medical domains, presents unique challenges due to the language's rich morphology, the scarcity of resources, and dialectical diversity. This study evaluates the efficacy of Conditional Random Fields (CRF), Support Vector Machines (SVM), and Stochastic Gradient Descent (SGD) models for named entity recognition in Arabic scientific texts. These models have been implemented on a self-collected dataset consisting of Arabic abstracts of theses. The named entities identified in the dataset include proteins, DNA, RNA, cell types, and cell lines. Focusing on the scientific domain, our comparative analysis reveals significant performance differences among the models, with hybrid approaches showing promising results. SGD, SVM, and CRF achieved F1-scores of 0.96, 0.91, and 0.80, respectively. The results demonstrate the effectiveness of the proposed models. The research contributes to Arabic natural language processing by highlighting model strengths and guiding future selections and development of named entity recognition models.

Keywords: Arabic Named Entity Recognition, Entity Extraction, Arabic NLP, Machine Learning.

22. A comprehensive survey explores Drug-Drug interaction prediction using Machine-Learning techniques

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Abstract:

Drug-Drug Interaction (DDI) is a critical health and safety concern that receives a lot of attention from both academia and business. Polypharmacy is often employed as a strategy to manage complex diseases such as cancer, diabetes, and age-related ailments. However, combining medications with other drugs can lead to unintended adverse reactions. DDIs may increase the chance of unanticipated negative effects and even unknown toxicity, putting patients at risk. Detecting and identifying DDIs not only helps clinicians avoid chronic but will also encourage the co-prescription of safe drugs for more effective therapies. It is expensive and time-consuming to identify drug-drug interactions (DDIs) and Adverse Reactions (ARs) among several medication pairings, both in vivo and in vitro. Recent advancements in computer science, specifically in the field of artificial intelligence (AI), have yielded techniques that enable researchers to identify drug-drug interactions. We present comprehensive approaches that enable in-depth analysis of potential interactions by taking into account various factors, including molecular structure, clinical data, network relationships, and existing literature. This paper offers an all-encompassing survey of research studies that utilize machine learning and deep learning algorithms for the prediction of Drug-Drug interactions.

Keywords: Drug-Drug interactions; Adverse Reactions; artificial intelligence.

21. Applied Arts:

23.Social media ads and their impact on the spread of the trend

إعلانات التواصل الاجتماعي وتأثيرها علي انتشار الترند

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Abstract:

Social media is a platform for people to discuss their issues and views. Before knowing the aspects of social media people should know what social media is? There are more than 3.8 billion social media users in the world as the number of social media users has increased recently, especially during the Covid-19 pandemic. Some people use social media to do their jobs from home during the Covid19 pandemic, such as online shops, and even office workers are required to use social media to facilitate communication. Moreover, some teachers require their students to use social media as teaching materials to avoid boredom. Finding adults and even children are among the most active social media users where people like to use social media because it makes certain things easier for them social media is a great place to promote your store or business online because it's so easy to promote brands or tourist attractions by uploading a photo easily with an attractive caption and from here comes the trend. Through this research, the researcher discusses social media advertising and its impact on the spread of the trend.

Keywords: Social media, trends, celebrity trends

المستخلص:

وسائل التواصل الاجتماعي هي منصة للناس لمناقشة قضاياهم وآرائهم .قبل معرفة جوانب وسائل التواصل الاجتماعي يجب أن يعرف الناس ما هي وسائل التواصل الاجتماعي؟ حيث هناك أكثر من 3.8 مليار مستخدم لوسائل التواصل الاجتماعي في هذا العالم حيث زاد عدد مستخدمي وسائل التواصل الاجتماعي مؤخرًا خاصة خلال جائحة .Covid-19 يستخدم بعض الأشخاص وسائل التواصل الاجتماعي للقيام بوظائفهم من المنزل أثناء جائحةCovid19 ، مثل المتاجر عبر الإنترنت، وحتى موظفو المكاتب مطالبون باستخدام وسائل التواصل الاجتماعي لتسهيل التواصل .علاوة على ذلك، يطلب بعض المعلمين من طلابهم استخدام وسائل التواصل الاجتماعي كمواد تعليمية لتجنب الملل.

فنجد البالغون وحتى الأطفال هم من بين أكثر مستخدمي وسائل التواصل الاجتماعي نشاطًا حيث يحب الناس استخدام وسائل التواصل الاجتماعي لأنها تجعل أشياء معينة أسهل بالنسبة لهم، وتعد وسائل التواصل الاجتماعي مكانًا رائعًا للترويج لمتجرك أو عملك عبر الإنترنت لأنه من السهل جدًا الترويج للعلامات التجارية أو مناطق الجذب السياحي من خلال تحميل صورة بسهولة مع تعليق جذاب و من هنا يأتى الترند. ومن خلال هذا البحث تتناول الباحثة مناقشة إعلانات مواقع التواصل الاجتماعى و تأثيرها على إنتشار الترند

الكلمات المفتاحية: مواقع التواصل الاجتماعى – الترند – ترندات المشاهير.