BOOK OF ABSTRACTS

FACULTY RESEARCH PUBLICATIONS

UNIVERSITY OF SCIENCE AND TECHNOLOGY
OF FUJAIRAH

ACADEMIC YEAR
2020-2021

SEPTEMBER 2021

جامعة العلوم والتقنية في الفجيرة
UNIVERSITY OF SCIENCE & TECHNOLOGY OF FUJAIRAH

Book of Abstracts

USTF Faculty Research Publications

Academic Year 2020-2021

Table of Contents

1	College of Engineering and Technology	3
2	College of Dentistry	10
3	College of Pharmacy and Health Sciences	21
4	College of Business Administration	39
5	College of Humanities and Sciences	40
6	College of Law	45

I. College of Engineering and Technology

Relaxing Method in the Evaluation of MPPT of Photovoltaic Cells Based on MIT Modeling

Mathematical Modelling of Engineering Problems
Amir J. Majid, Ph.D.

A relaxation method is proposed to determine the maximum power point tracking of a small to medium powered photovoltaic module, based on the non-referenced MIT model, with analytical evaluation of the maximum power of the generated voltage. In implementing this algorithm, there is no need for continuous online measurements of temperature or irradiance, which are the most used variables used in the evaluation of the I-V relationship of PV cells. The method has the advantage of adequate accuracy without any oscillations, compared with certain conventional methods. The method can track accurately the maximum power point under changes in atmospheric conditions and load variations, by referring it with the MIT model.

The Evaluation of Wind Energy Based on the Inherent Nature of Wind Speed Assessment at Fujairah (UAE)

Instrumentation Mesure Métrologie
Amir J. Majid, Ph.D.

Commonly problem all the world faced these days is: covid-19 pandemic, the way of transmission by human or animals. The solution of that is take necessary precautions, one of most important of them is: to Keep a safe distance (at least 2 meters). But how we can achieve that, and most places crowded. That's the problem, our team suggest a solution is an application downloaded to our phone, the benefit of it is that it can measures the distance between you and the other person and other unique points like:

1. We can merge with another site that (Alhosn) to reduce the seriousness of this pandemic.

2. This application is aware that anyone who passes in front of him will give him an alert, but only for more than 2 minutes.

Economic Planning of the Operation of PV-Connected Distribution Network Using a Probabilistic Model for Extending the Network Lifetime

International Journal of Sustainable Development and Planning
Amir J. Majid, Ph.D.

The power sharing of PV sets with battery banks in a low voltage distribution network, is optimized with the aim of extending network lifetime. The network lifetime is analyzed using a probabilistic model, in which each PV-battery set has a certain failure probability of supplying power to any load demand center. This probability is assumed to be of normal distribution, that is related to other factors such as power rating, coverage availability, and battery DoD. To extend network lifetime, redundancies in power sharing are removed by activating different groups of PV sets at different times, with durations depending on their joint Gaussian probabilities in supplying the load demands. The contribution of each PV-battery set is estimated in an intuitive method according to the evaluated probabilities, in which the network is converted into source nodes and load nodes distributed as an ad hoc network, with formulated Gaussian probabilities. An economic load dispatch is then evaluated among the selected PV sets of probabilities higher than a predefined threshold value, to optimize power sharing of the load. A case study of several PV-battery sets supplying several distributed loads, is analyzed, and simulated, with formulated joint probabilities. It is found that lifetime is extended by 190% for three PV sets supplying two load centers.

SCENARIOS OF LIFETIME EXTENSION ALGORITHMS FOR WIRELESS AD HOC NETWORKS

International Journal of Computer Networks & Communications (IJCNC)
Amir J. Majid, Ph.D.

An Algorithm to extend sensor lifetime and energy is implemented for different scenarios of ad hoc and wireless sensor networks. The goal is to prolong the lifetimes of sensors, covering a number of targeted zones by creating subsets of sensors, in which each subset covers entirely the targeted zones. Probabilistic analysis is assumed in which each sensor covers one or more targets, according to their coverage failure probabilities. Case studies of different sensor subsets arrangements are considered such as load switching, variable target load demands as well as a perturbation in sensor planner locations.

Reliability and Failure Rate Evaluation of Lifetime Extension Analysis of Ad Hoc and Wireless Sensor Networks

Mathematical Modelling of Engineering Problems
Amir J. Majid, Ph.D.

The reliability and failure rate of evaluating the lifetime extension of Ad Hoc and wireless sensor networks, are analyzed based on a probabilistic network model that assigns a failure probability from each sensor to each target zone, and when sensors are grouped in subsets, network lifetime is extended since redundancy of energizing the sensors is avoided. Theoretical formulation of reliability and failure rates of a model made of parallel sensors covering series targets, is performed, using different probability density functions (PDF) describing the performance reliability of sensors over time. The selection of the extended network lifetime depends on its reliability evaluation, which is induced as a proportionality coefficient for updating lifetime extension by adjusting the contribution of sensors energizing in cyclic time slots. Reliability is reduced with lifetime extension, but both can be increased when the number of sensors is larger than the targeted zones.

Lifetime Extension of Three-dimensional Wireless Sensor Networks, Based on Gaussian Coverage Probability

Journal Européen des Systèmes Automatisés
Amir J. Majid, Ph.D.

The aim of this work is to evaluate the nth joined probability of three-dimensional wireless sensor networks, and to extend the lifetime of these networks. A Gaussian probability distribution function is assumed for the power coverage probability for each sensor in the 3-dimensional cartesian and spherical coordinates. The overall joint probability is evaluated from each sensor to a target in the network, and then the network lifetime of sensors power sensing a number of targets, is extended based on removing redundancies of powering all sensors at the same time. Proportional to the evaluated probabilities, sensors are energized during slots of periodic time. The formulated probabilities are assumed to be uncorrelated among each sensor to any target zone. A case study is introduced to demonstrate extending the lifetime of a network comprising 7 sensors targeting two uncorrelated zones, in which 8 different cases of subsets are formed, when a minimum threshold of overall power coverage probability of 35% is assumed. Network lifetime is extended more than 70%, with some sensors reaching more than 90% power saving. This work can be extended to deal with other types of probabilities, as well as with cases of correlated sensor-target coverages.

Lifetime Extension of Distributed Power Networks by Evaluating the Joint Gaussian Probabilities of the Power Coverage of Generators to Load Centers Demand

Proceedings of the 2nd African International Conference on Industrial Engineering and Operations Management Harare, Zimbabwe, December 7-10, 2020
Amir J. Majid, Ph.D.

To extend the lifetime of a distributed power network, that consists of several generators supplying several load centers, according to a joint Gaussian probability distribution functions (PDF) of various random variables with estimated probabilities of source-load power coverage. The probability of any generator covering a load center is assumed to be readily known from statistical data. The nth order joint Gaussian PDF of all generators to any load center is calculated according to variations in the value of the mean covered power. This procedure is expanded to all load centers with the assumption that they are independent. The overall joint PDF with probabilities above a certain threshold value, are selected in an algorithm to prolong whole network lifetime by removing redundancies in powering all generators in same time. The contributions of each generator in supplying overall network loads, are then estimated in an intuitive method according to the evaluated probabilities of each generator supplying whole network load. The lifetime extension is demonstrated in a case study example.

The Shift to Online Assessment Due to COVID-19: An Empirical Study of University Students, Behavior and Performance, in the Region of UAE

International Journal of Information and Education Technology
Liaqat Ali, Ph.D.

The education system has dramatically changed from physical to online due to COVID-19. Millions of learners around the world have been affected due to the pandemic caused by coronavirus. The emergence of COVID-19 has forced educational institutions to divert all strategies from physical to online platforms for the safety of the students, instructors, and all the other staff members. The processes of examining students and their assessment strategies are heavily affected due to the sudden adoption of online education than physical education at campus. The research in this paper discusses issues relevant to online assessments and the strategies used by the universities due to COVID-19 in the region of UAE. The research collected data through an online questionnaire from 312 undergraduate university students in UAE to understand their behavior. Furthermore, their performance of online assessment is gauged through the analysis of exams transcripts and comparison is made with their previous GPA and CGPA to understand the effects of COVID-19 on their overall performance. Semi-structured interviews were conducted to discuss issues related to e-assessment and recommendations are made to improve the online assessment process in universities. The research proves that students have benefited from the online assessment.

OFDM PERFORMANCE WITH TWO-RAY MULTIPATH FADING MODEL USING INET FRAMEWORK SIMULATION

International Journal of Advanced Trends in Computer Science and Engineering
Liaqat Ali, Ph.D.

IEEE 802.11g uses OFDM (Orthogonal frequency division multiplexing) to achieve transmission of data rates up to 54 Mbps. OFDM is a method for transmitting large amounts of digital data over radio frequency and radio wave. This is achieved by splitting the radio signal into smaller sub-signals that are each given different frequencies and transmitted simultaneously to a specific receiver. In wireless communication, the received packet encounters path loss which exists between transmitting antenna and receiving antenna, especially when they are in LOS.Fading is one of the major problems of digital communications, which results from different factors. This paper presents the effect of Two-ray Multipath fading model with the variation of the OFDM data rate transmissions. The experiment was conducted using INET simulation framework. The experiment shows that a high data rate transmission is not always achieving better performance with the existence of Two-ray Multipath Fading model.

Accessible Websites for Everyone — A Case of UAE Universities Websites

International Journal of Information and Education Technology
Liaqat Ali, Ph.D.

Web Accessibility means that websites, tools, and all technologies are designed in an accessible way for all people regardless of any disability and other physical limitations. The number of disabled people is far greater than anyone could estimate. The importance of online education cannot be ignored as it can provide access to a range of educational material available over the internet. There is now much discussion about the issue of E-accessibility when it comes the to the design and development of the website and it is becoming a legal requirement for governmental and public websites to conform with the standards defined by the world wide web consortium (W3C), an organization which provides guidelines to maintain World Wide Web and its standards. Research proved that there is very little importance given to the issue of E-accessibility for people with special needs. The aim of this research is therefore to measure the accessibility level of the educational websites in the UAE against the standard defined by W3C and to form recommendations on how to improve and achieve the highest level of e-accessibility for students with special needs learners as it provides them easy access to a wider range of educational material. Enabling a website to meet the needs and requirements of special students is a concern for all educational institutions.

The Shift to Online Education Paradigm due to COVID-19: A Study of Student's Behavior in UAE Universities Environment

International Journal of Information and Education Technology
Liaqat Ali, Ph.D.

The shift to an online education paradigm has been dramatically seen in educational systems and universities due to COVID-19 across the world, especially in United Arab Emirates. The emergence of COVID-19 forced educational institutions to divert all strategies from physical to online platforms for the safety of students, instructors and all the other staff members. However, this is not the case in educational institutions only because other governmental and non-governmental institutions are affected in the same way around the world. The objective of this research is to understand the behavior of students due to a sudden shift towards an online education experience in university environment and gauge their preference either on physical or online education system for the future. The research collected data through an online questionnaire from 210 undergraduate university students which further helped the researcher to draw the discussion and conclusion. The research proves that a high majority of students are willing to change from physical education to an online platform and they believe that they can perform well by the adoption of this new platform of online education system. The research recommendations are helpful for the educational policy developers.

Real-Time Crack Detection Using ROV

Part of the Lecture Notes in Networks and Systems book series
Dr. Haythem El-Messiry, Hany Khaled, Ahmed Maher, Amin Ahmed, Faris Hussian

The paper presents a system towards a robust detection model to detect under water concrete cracks on different surfaces and pipelines. The proposed method can preserve different crack's patterns in different environmental circumstances. Which increases the level of robust detection on concrete and pipelines inspection when combined to Remotely Operated Vehicles (ROV). The system is developed in two phases. Phase one building small size ROV underwater, and phase two developing crack detection model uses low level visual methods based on scale-space decomposition the algorithm is mounted on the ROV to detect the cracks and report the cases to land station. The detection algorithm was tested using a dataset of concrete surfaces classified as positive/negative images with and without cracks were used. The model's accuracy was verified to identify the best result. For the dataset used in this work, the best experiment yielded a model with accuracy of 92.6%, showcasing the ability of using classical segmentation model for concrete crack detection.

II. College Dentistry

Investigations of Sound and Carious Dentin Using Ultrasound Velocity and Scanning Electron Microscopy-An In-vitro Study

Advanced Dentistry and Oral Health
Prof. Azza H Eldarrat

To investigate structural changes in human dentin due to aging process or caries using ultrasound velocity and scanning electron microscopy (SEM). Materials and Methods: An in-vitro study conducted on human dentin samples. Dentin samples were prepared from the extracted molars using a computerized water-cooled cutting machine. Each sample was 7mm long, 5mm wide and 2mm thick [± 0.1mm]. Fifteen dentin samples were prepared for the three experimental groups. Each group consists of five dentin samples. Group 1 (20year old sound dentin), group 2 (50year old sound dentin) and group 3 (carious dentin). Ultrasound velocity measurements were carried-out on dentin samples and the data were compiled and analyzed using Wave Star software and Minitab 12.1 software. After the ultrasonic measurements, the dentin samples were characterized using SEM. Results: Ultrasonic measurements showed that the arrival time of wave signal was 35.1µs in 50year old dentin, 35.8µs in 20year old dentin and 36.4µs in carious dentin, and there were significant differences ($p < 0.05$ at 95% confidence level) in the mean values of the ultrasonic velocity measurements between group 1 and group 2, and between group 2 and group 3. Based on the SEM micrographs, the structural changes can be seen clearly in 50year old dentin due to the aging process and in carious dentin due to caries. Conclusion: Results indicated that structural changes of human dentin due to aging process and caries can be distinguished using ultrasonic velocity, however, further work is required on larger sample size, intermediate ages and restored teeth.

The ASSOCIATION OF DEMOGRAPHIC VARIABLES WITH EARLY RECOVERY AFTER CORONARY ARTERY BYPASS GRAFTING AT CARDIAC CARE PUBLIC HOSPITAL, KARACHI

Journal of Liaquat University of Medical & Health Sciences
Erum Khan, Ph.D.

Objective: To determine the association of demographic variables with postoperative early recovery in patients undergoing Coronary Artery Bypass Grafting.

Methodology: A descriptive cross-sectional study was conducted at a cardiac care public hospital, Karachi, Pakistan from October 2019 to June 2020, recruiting 225 isolated Coronary Artery Bypass Grafting patients, not having a previous history of any cardiac surgery, combine surgeries, or history of mental disorder and other serious comorbid were included, using a non-probability consecutive sampling technique. Data were analyzed using the SPSS (version 23). Mean±SD and median (IQR) were computed for quantitative variables as appropriate while frequency and percentages for qualitative variables. Spearman's correlation and logistic regression analysis were used to identify the association. The p-value of <0.05 considered as significant.

Results: The mean age of participants was 55.13±8.02, majority of the participants were male (80%), of age <60 years (77.3%), belonged to the lower-middle class (81.3%), non-smokers (74.7%), and had normal hospital stay (61.8%). Gender, socioeconomic status, and preoperative status were significantly associated with postoperative recovery; age >60 years, HbA1C level, and preoperative status had a significant relationship with the length of ICU stay, and age >60 years, preoperative status, length of ICU stay, and postoperative score were found in association with length of stay in hospital.

Conclusion: Gender, older age, socioeconomic status, diabetes control, and preoperative status had significant effects on postoperative recovery, length of stay in ICU and hospital after Coronary Artery Bypass Grafting.

An In-Vitro Comparative Analysis on Root Canal Transportation, Centering Ability, Angle of Curvature Using XP-Endo Shaper and WaveOne Gold Rotary Systems-A CBCT Study

Systematic Reviews in Pharmacy

Asok Mathew, Abdullatif Burahmah, Salem Abu Fanas, Okba Mahmoud, Mohamed Abdullah Jaber, Prabhu Manickam Natarajan, Ahmed Radeideh

Background: In this study we highlight the difference between two recent single file endodontic systems XP-endo Shaper by FKG and WaveOne Gold by Dentsply by measuring their efficiency through assessing the centering ability, canal transportations, preparation time and changes in canal curvature on resin endodontic blocks using Cone Beam Computed Tomography.

Material and Methods: Fourteen resin endodontic blocks are used for each system. The assessment was done by comparing and measuring the data collected of pre-instrumentation and post-instrumentation CBCT axial and sagittal images to assess the centering ability, canal transportation, preparation time and changes in canal curvature. These measurements were taken in 3mm ,5mm and 7 mm from the apical exit of the endodontic block used.

Results: The mean Canal Transportation of XP System (Group A) in 3mm, 5mm and 7mm sections measured with values (-.5214, -.2714 and -.02140) respectively. The mean transportation of WaveOne Gold system (Group B) in 3mm, 5mm and 7mm in sections with values (-.3214, -.2571 and -.1143.) respectively, whereas the mean centering ability of XP System (Group A) in 3mm, 5mm and 7mm sections measured with values (.0714, -.6131 and -.9881) respectively. The mean transportation of WaveOne Gold system (Group B) in 3mm, 5mm and 7mm sections is given as (-.3255, -.6310 and -.6429) and there was no significant difference noted in centering ability and canal transportation between the two systems. The mean root canal preparation time showed no statistical difference between the two systems employed. There was statistical difference noted in the changes in pre- and post-curvatures of the canal between two systems studied.

Conclusion: With our limitation in sample size, it was concluded that reciprocation motion in WaveOne Gold system gave better results in canal transportation and centering ability in the simulated apical part in endo-blocks than continues motion rotary preparation in XP endo shaper system. WaveOne Gold produced lesser canal transportation in the apical 3rd while XP endo shaper produced less canal transportation and centering ability in the middle 3rd simulated endo-blocks.

Forensic Odontology-A Review

Indian Journal of Forensic Medicine & Toxicology
Prabhu Manickam Natarajan, Asok Mathew, Vijay Bhavrao Desai, Shibu Thomas, Eyas Abuhijleh, S. Srinivasan

Forensic dentistry may be defined as that branch of forensic medicine that applies dental knowledge to civil and criminal problems. It is the branch of Forensic sciences which utilizes the skill of the dentist in the processing, review, evaluation, and presentation of dental evidence with the purpose of contributing scientific and objective data in legal processes. The methods of collecting the data utilizes the developed technologies and have undergone significant transformation. The methods used include, dental imaging techniques, bite-mark analysis, DNA analysis using oral tissues, cheiloscopy, and rugoscopy in addition to facial reconstruction, denture identification, comparison microscopes, and tongue prints which are the recent inputs in the field of forensic odontology. This article provides an overview of the recent trends in conventional forensic methods and also provides an insight into the recent concepts used in this field.

The Association between Teeth Loss and Oral Health Problems

Indian Journal of Forensic Medicine & Toxicology
Aesa Alzaroug Jaber, Alshame M.J.Alshame, Khaled Owidat Abdalla, Prabhu Manickam Natarajan

Background: The teeth play various functional roles, from the most basic functions to more subtle functions. One of the most tragic events that can happen to the teeth are loss it, as a result trauma or dental diseases. Tooth loss has esthetic, functional, positional and psychological impacts on the life of individuals. Objectives: To investigate the association between tooth loss and oral health problems among partially and completely edentulous patients.

Method: (Questionnaire and Clinical Examination). Self-administered questionnaire was distributed to the patients to collect information relating to demography and cause of tooth loss, in addition to mastication and speech state after tooth loss. Four clinical conditions including supra-eruption, drifting teeth, temporomandibular disorders and bone resorption were used to recognize the effects of missing teeth. Patients seeking dental treatment at General Hospital, Morzuk, Libya were recruited for the study. Criteria included age of 16 years and above with one or more missing teeth except for third molars.

Results: altogether 58 participants, 31 (53.4 %) were males while 27 (46.6%) were females. The participants were aged 16–>45 years, among them, 44 patients (75.9%) are partially edentulous, and 14 patients (24.1%) were completely edentulous. The patients with complete teeth loss and the patients with missing both the anterior and posterior teeth are most groups suffer problems among patients who involved in the study. patients who loss posterior teeth are the lowest group had, suffer of health problems due to loss of teeth among all of them. The general relationship between tooth loss and the oral health problems was positive and strong.

Conclusions: there are statistically significant relationship between tooth loss and oral health problems, where the strong value of this relationship (0.614) and significance within less than (0.05).

Pre –treatment implant CBCT Analysis of Anterior Mental Loop Length, Lingual Concavity, and Inclination of Alveolar Ridge in the Mandible – A UAE Study

Indian Journal of Forensic Medicine & Toxicology
Asok Mathew, Raghad Mohammed Sadiq, Suleiman Ergieg, Maher al Shayeb, Eyas Abuhijleh, Sudhir Rama Varma, Sam Thomas

Aims: This study aims to use 3D imaging (CBCT) in order to identify the presence of anterior mental loop, know its dimensions and variation in anatomy, lingual concavity and the angle of tilt in the mandibular ridge aiding in better treatment planning for surgical approaches.

Method: Forty CBCT images of patients scanned by Planmeca Romexis for different diagnostic purposes, were analyzed using the Romexis software.

Results: The study results showed that mental loop was present in 62.5% of patients on the right side and 70% of patients on the left side, with a mean length ranging from 0.30 mm to 3.12 mm. The presence of anterior canal was observed in 5 patients (2 Females and 3 Males) 12.5% of the cases examined. As mentioned in methodology lingual concavity was classified based on its morphology into three classifications: A (Acute undercut) B (stream line) C (Kidney shape), with class C (Kidney shape) amounting up to 42.5% of the cases while the least common was class B (stream line). In 40% of the cases, deepest lingual concavity was in the region of the second molar.

Conclusions: Placement of implants in the molar region of the mandible may result in perforation of the lingual cortex due to severely inclined ridge or deep lingual concavity. Presence of mental loop and anterior mandibular canal in the region of mandibular region needs careful evaluation using different tomographic slices.

The mean overjet in Libyan children and the relationship between increased overjet and incisors trauma

Indian Journal Dental Research

Suleiman M O. Ergieg, Varma R Sudhir, Thoms O Shibu, Salem A Fanas, Mathew Ashok

Aims and Objectives: The aim of this study was to assess the mean overjet in school-going Libyan children and to examine the relationship between increased overjet and permanent incisor's trauma.

Materials and Methods: This study is a part of a cross-sectional investigation of aspects of dental health of 2015 school going Libyan children aged between 6 and 16 years old of both genders from both rural and urban areas. Overjet was measured as the horizontal distance in millimetres between the upper and lower incisors. Trauma to permanent incisors was assessed according to Elli's Classification.

Results: SPSS version 20.0 for percentages was used for statistical analysis. The relationship between increased overjet and incisor trauma was tested using the Chi-square test at 0.05 significance level. The overjet measurement ranged from -2 mm to 8 mm with the mean overjet of 3.062 (1.23, SD). The prevalence of incisor trauma was statistically significantly higher in children with increased overjet ($P < 0.0001$).

Conclusion: The average mean overjet value in Libyan children is between 2 mm and 3 mm and below or above these values, considered decreased or increased, respectively. Traumatic injuries to permanent incisors significantly increased with increased overjet.

Cemento-ossifying fibroma: Case report

International Journal of Applied Dental Sciences
Dr. Mahendra Patait, Dr Vishakha Chaudhari, Dr. Ashok Mathew, Dr. Rajan Mangrolia and Dr. Mahesh Ahire

Ossifying fibroma (OF) is a benign, non-odontogenic tumor of the jaw, and it is classified as fibroosseous lesion of jaw. Earlier, the lesion was sub classified histologically into ossifying fibroma and cementifying fibroma according to the hard tissues formed either bone or cementum. Menzel in 1872 called it as cemento-ossifying fibroma (COF). This lesion is included in the group of mesodermal odontogenic tumors and usually present as a gradually growing lesion that might achieve enormous size with resultant deformity, if not treated. The tumor may grow quite extensively; thus, the term “aggressive” is occasionally applied. In this article, A case of cemento-ossifying fibroma involving the left side of mandible is described in a 25-year-old female patient. The clinical, radiographic, histologic features are described, and several differential diagnoses are discussed.

Clinical Findings and Management of a Rare Case of Multivariate Type of Dentinal Dysplasia: A Case Report

Journal of International Dental and Medical Research
Sudhir Rama Varma, Mohammed Amjed Al Saegh, Emad S. Elsubeihi, Asok Mathew, Adil Mageet5, Ahmed Elsaeed Aleiss, Firas Alif Semaan, Feras Chayeb

Dentinal dysplasia is a rare autosomal dominant condition affecting both deciduous and permanent dentitions. The presentation of dentinal dysplasia can be varied and intriguing. It is subdivided into two types and shares similar characteristics with dentinogenesis imperfecta and its variations. Marked radiographic similarities have been reported between dentinal dysplasia and dentinogenesis imperfecta. We present a case of a 26-year-old man who presented at our clinic with clinical features identical to those of aggressive periodontitis, accompanied by clinical and radiographic features commonly associated with both type 1 and 2 dentinal dysplasia. As the condition had not been reported previously in the literature, we believe the term “multivariate generalized dentinal dysplasia” would describe this unique condition accurately. The treatment plan was complex, aided by biomarker evaluation to time the treatment chart, which included extraction of selected teeth, periodontal surgery involving bone grafts, splinting, local delivery of medications, laser-assisted debridement, and regular follow-up appointments. Hereditary dentinal abnormalities are rare and are observed in people of different ethnicities with varied presentations. The treatment of these conditions is challenging and demanding, as most patients are in an active disease state. Biomarker assessment during treatment planning plays a critical role in long-term clinical outcomes.

The Effects of Polishing and Home Bleaching on Surface Roughness of Composites

Journal of International Dental & Medical Research
Al-Shekhli, Ali A. Razooki; Aubi, Isra'a Al

The aim of this study was to investigate the effect of both polishing and home bleaching agent on the surface roughness of two different composite brands. Two types of direct composite restorative material of A2 shade were selected for this study: Filtek Z250 XT nanohybrid universal composite restorative material (3M ESPE) and Tetric N-Cream nanohybrid universal composite restorative material (Ivoclar Vivadent). Thirty specimens were prepared from each composite material represented by the letter A for 3M composite and the letter B for Tetric composite (total number of specimens were 60). Each specimen was prepared by compressing sufficient amount of material into a mould of 5 mm in diameter and 2 mm in thickness by two glass slides with acetate celluloid strip in between and curing the specimen by making the curing tip in intimate contact with the acetate celluloid strips covering the composite top surface with LED Woodpacker light curing unit for 20s with an LED of output 600 mW/cm2. The bottom surface of each sample was marked. All samples were stored in plastic containers with 2ml distilled water for 24 hours at room temperature. The thirty specimens of each group were sub divided into three subgroups (n=10): A1/B1 were the control subgroups (cured only), A2/B2 were the polished subgroups (cured and polished) and A3/B3 were the bleached subgroups (cured, polished and bleached) which were bleached using home-type bleaching agent containing 9.5% hydrogen peroxide (PHILIPS ZOOM /DayWhite).Then, surface roughness of the 60 samples (top surfaces) were measured and recorded (Ra) value in µm using a profilometer surface roughness tester (Mitutoyo Surftest SJ-400). Data was statistically analysed by comparing surface roughness values of the sixty specimens for their tops with one way ANOVA and t-test at 5% level of significance. Statistical analysis of the data revealed that, there was a statistically significant difference between the 6 subgroups being tested in their surface roughness values (ANOVA, p≤ 0.05) for their top's surfaces. There was a statistically significant increase in the surface roughness of the polished composite samples after being bleached with 9.5% hydrogen peroxide. There was insignificant difference (Paired Samples Test p≥ 0.05) in the surface roughness between the two major groups A & B. Polishing of composite restorative material is an important step to be done before and after bleaching procedure in order to minimize the surface roughness that can lead to biofilm accumulation and stains retention. Clinically, there is no need to replace composite restorations after bleaching from surface roughness aspect. Knowledge about the effect of bleaching on the properties and behavior of composite resins is important to use the most suitable composite resin for restoration of teeth undergoing bleaching. By doing so, the need for composite resin restoration change due to possible complications caused by bleaching treatment is obviated.

Evaluation of Cyclic Fatigue Resistance of Different Rotary Endodontic File Systems

Journal of International Dental and Medical Research
Ali A. Razooki Al-Shekhli, Isra'a Al Aubi

Aim of the present study was to compare the cyclic rotations needed to fracture four different rotary nickel titanium endodontic instruments. Four different endodontic Nickel Titanium rotary systems were selected for this study: OneShape, OneCurve, ProTaper Next and HyFlex EDM of ISO size 25, 25 mm instrument length and 0.06 instrument taper. All were exposed to cyclic fatigue tests in a custom-made simulated canal having 60° curvature. Cyclic fatigue was calculated for each rotary system by calculating the time needed to fracture the instrument in seconds while being rotated in a steel block curved canal. Data was statistically analyzed by calculating the mean time to fracture the instrument in seconds, standard deviation, one way ANOVA and t-test at 5% level of significance. HyFlex EDM instruments had the highest cyclic fatigue resistance among all the other instruments being tested. One-way ANOVA test revealed that there was a statistically significant difference between all the four groups being tested ($P \leq 0.05$). Further analysis of the data was done using t-test, also indicated that there was statistically significant differences ($P \leq 0.05$) between all the pairs of groups being tested individually. Cyclic flexural fatigue resistance was observed highest for Group IV (HyFlex EDM) and lowest for Group I (One Shape). HyFlex CM files had the exceptional lengthiest survival time while files from One Shape showed limited survival. We obtained the clinical significance from this in- vitro study: showing their exceptionalism in resistance and prolonged survival time. Proving their superiority in resistance and longer survival time, HyFlex CM rotary NiTi files can be used in curved root canals and eventually will be helpful in eradicating one of the factors for file fracture clinically during root canal treatment i.e., cyclic fatigue- where root canal exhibits a sharp bend or curve.

Evaluation of Halitosis and Sialometry in Emirati Diabetic Patients before and after Periodontal Treatment.

Indian Journal of Forensic Medicine & Toxicology.
Eid Abdelmagyd, Hossam Abdelatty; Natarajan, Prabhu Manickam; Moustafa Elsayed, Walid Shaaban

Halitosis is an important social complaint which affects both healthy and periodontally diseased individuals. Oral malodor is mainly caused by a microbial degradation of both sulfur-containing and nonsulfur-containing amino acids into volatile, bad-smelling gases. Anaerobic gram-negative bacteria, the same species that have been linked to periodontal diseases, are especially involved in this process, explaining the link between oral malodor with periodontitis. The following study was done to investigate the parameters of halitosis and sialometry of Emirati diabetic patients in correlation with oral concentration of volatile sulfur compounds (VSC), salivary flow rate before and after non-surgical periodontal treatment (scaling & root planning) for patients having moderate Generalized and/localized chronic periodontitis. Subjects and Methods: Eighty-one (81) Emirati subjects volunteers were recruited from the dental hospital, with average age 38-49 years. They have been divided into in three groups: Group I (negative control), Group II, and Group III and Group IIIa. Halitosis measurements for all volunteers had been recorded using Gas Chromatography. For group III samples were collected before periodontal treatment, and subsequently at two- & four-weeks following start of non-surgical periodontal treatment (Scaling & root planning). Results: There were 54 patients participated in this study. Of the 54, 27 were control and the remaining were controlled DM. The mean and SD of all variables before and after the intervention showed that the values of all variables reducing after the intervention. All the difference observed was statistically significant (P<0.001). This study observed that the mean value of unstimulated salivary flow rate and stimulated salivary flow rate was less in the controlled DM group compared to control group, but for probing picker depth, CAL and average bone loss was more in controlled DM group compared to control group. Conclusion: Based on the findings, it can be stated that diabetes is a major risk factor for periodontitis, and the risk of periodontal disease increases if glycemic control is poor; it was also proved beyond doubt that people with poorly controlled diabetes are at an increased risk of periodontal disease and loss of alveolar bone. Controlling diabetes by successfully improving glycemic control will reduce the risk and severity of periodontal diseases.

III. College of Pharmacy and Health Sciences

Study of the impact of objective structured laboratory examination to evaluate students' practical competencies

Journal of Biological Education

Ebenezer Chitra, Srinivasan Ramamurthy, Shar Mariam Mohamed, Vishna Devi Nadarajah

Measurement of multiple competencies of students is getting more emphasis in undergraduate education validating the need for work-ready graduates. We developed the objective structured laboratory examination (OSLE) to measure the practical competencies of final year biomedical science students. This paper analyses the impact of OSLE on students' practical competencies and the utility of OSLE. A total of 63 students (89%) from two different cohorts (BM1 and BM2) were recruited to give feedback on OSLE using a structured questionnaire under three themes viz., prior learning, administration and feedback. Open feedback was obtained from both faculty and students. Reliability of different components of the questionnaire was established by Cronbach's α. Correlation between OSLE score and cGPA (cumulative grade point average) of each student was calculated using Pearson correlation coefficient. Cronbach's α value for all the three domains ranged from 0.6 to0.9. Students' perception of OSLE was generally positive with a median of 4 in a to 5-point Likert scale (4 = agree). Feedback from students and faculty indicated that OSLE motivated the students to improve their practical skills. Interestingly, there was no correlation between OSLE score and cGPA of the students reiterating the different competency sets used by skill assessment versus knowledge assessment.

Effect of Propolis Nanoparticles against *Enterococcus faecalis* Biofilm in the Root Canal

Molecules

Parolia, Abhishek, Haresh Kumar, Srinivasan Ramamurthy, Thiagarajan Madheswaran, Fabian Davamani, Malikarjuna R. Pichika, Kit-Kay Mak, Amr S. Fawzy, Umer Daood, and Allan Pau

To determine the antibacterial effect of propolis nanoparticles (PNs) as an endodontic irrigant against Enterococcus faecalis biofilm inside the endodontic root canal system. Two-hundred-ten extracted human teeth were sectioned to obtain 6 mm of the middle third of the root. The root canal was enlarged to an internal diameter of 0.9 mm. The specimens were inoculated with E. faecalis for 21 days. Following this, specimens were randomly divided into seven groups, with 30 dentinal blocks in each group including: group I—saline; group II—propolis 100 µg/mL; group III—propolis 300 µg/mL; group IV—propolis nanoparticle 100 µg/mL; group V—propolis nanoparticle 300µg/mL; group VI—6% sodium hypochlorite; group VII—2% chlorhexidine. Dentin shavings were collected at 200 and 400 µm depths, and total numbers of CFUs were determined at the end of one, five, and ten minutes. The non-parametric Kruskal–Wallis and Mann–Whitney tests were used to compare the differences in reduction in CFUs between all groups, and probability values of $p < 0.05$ were set as the reference for statistically significant results. The antibacterial effect of PNs as an endodontic irrigant was also assessed against E. faecalis isolates from patients with failed root canal treatment. Scanning electron microscopy (SEM) and confocal laser scanning microscopy (CLSM) were also performed after exposure to PNs. A Raman spectroscope, equipped with a Leica microscope and lenses with curve-fitting Raman software, was used for analysis. The molecular interactions between bioactive compounds of propolis (Pinocembrin, Kaempferol, and Quercetin) and the proteins Sortase A and β-galactosidase were also understood by computational molecular docking studies. PN300 was significantly more effective in reducing CFUs compared to all other groups ($p < 0.05$) except 6% NaOCl and 2% CHX ($p > 0.05$) at all time intervals and both depths. At five minutes, 6% NaOCl and 2% CHX were the most effective in reducing CFUs ($p < 0.05$). However, no significant difference was found between PN300, 6% NaOCl, and 2% CHX at 10 min ($p > 0.05$). SEM images also showed the maximum reduction in E. faecalis with PN300, 6% NaOCl, and 2% CHX at five and ten minutes. CLSM images showed the number of dead cells in dentin were highest with PN300 compared to PN100 and saline. There was a reduction in the 484 cm−1 band and an increase in the 870 cm−1 band in the PN300 group. The detailed observations of the docking poses of bioactive compounds and their interactions with key residues of the binding site in all the three docking protocols revealed that the interactions were consistent with reasonable docking and IFD docking scores. PN300 was equally as effective as 6% NaOCl and 2% CHX in reducing the E. faecalis biofilms.

Role of sToll-like receptors 2 and 4 in stage 2 periodontitis patients with and without type 2 diabetes: A Randomized clinical control trial.

Research J. Pharm. and Tech.

Amitha Ramesh, Sudhir Rama Varma, Srinivas Ramamurthy, Maher al Shayeb, Moyad Shahwan, Abed M. Atia Elkaseh, Al Moutassem Billah Khair, Adil Mageet, Madeeha Arif, Biju Thomas, Pavithra Jaganathan, Suchetha Shetty, Sharmila K.P

Objective: The role of TLRs as principal signaling receptors in recognizing endotoxins on gram positive and negative bacteria is facilitated by TLRs and further enhances its role as a potential biomarker in assessing periodontal disease. The study aimed at evaluating the expression of sTLR2 and sTLR4 among healthy, periodontal and diabetic patients and further if there a comparable expression among the TLRs among genders. Material and

Methods: Patients were selected according to pocket depth, Clinical attachment loss and radiographic bone loss. Unstimulated whole saliva was collected. sTLR2 and sTLR4 quantification was estimated by ELISA. Comparison of sTLRs between the study groups were performed using ANOVA followed by Tukey post Hoc test. Independent sample t test was used to compare between the genders. (p=0.05)

Result: Expression of sTLR2 was higher among periodontitis patients compared to diabetic patients, this was also evident with relation to genders. sTLR4 showed significant expression among the three groups and also among the genders.

Conclusion: The expression of sTLR2 was higher among periodontitis patients compared to diabetic patients. More studies need to be carried out to evaluate TLRs values among genders.

Biosimilars: An Update

International Journal of Nutrition, Pharmacology, Neurological Diseases
Bhojaraj, Saravanan, Abhinav Raj Ghosh, B. S. Sushmitha, Srinivasan Ramamurthy, et al

Biologics are medicines primarily derived from living systems and produced through recombinant DNA (rDNA) and monoclonal technologies. Generic version of biologics with improved efficacy and safety is called biosimilar. Patent and copyright expiration of biological products permits the entry of biosimilars. Synthesis of biosimilars involves two main processes, such as monoclonal antibodies and rDNA technology, and characterized by various methods such as posttranslational modification, mass spectrometry, peptide mapping, three-dimensional (high-order) structure, X-ray crystallography, ion mobility spectrometry, and hydrogen deuterium exchange mass spectrometry. Though both generic and biosimilar products follow the same regulatory approval, the requirements are not the same due to the variability in composition and instability. Hence, it is essential to develop pharmacokinetic and pharmacodynamic data to support the efficacy and safety data on biosimilars. This review summarizes the recent updates on biosimilars, synthesis, characterization, and current market status. Brief information on the role of biosimilars in multiple sclerosis is also provided in the review.

Immunomodulatory Expression of Cathelicidins Peptides in Pulp Inflammation and Regeneration: An Update

Current Issues in Molecular Biology
Varma, Sudhir Rama, Marah Damdoum, Mohammed Amjed Alsaegh, Mithra N. Hegde, Suchetha N. Kumari, Srinivasan Ramamurthy, Jayaraj Narayanan, Eisha Imran, Juzer Shabbir, and Zohaib Khurshid

The role of inflammatory mediators in dental pulp is unique. The local environment of pulp responds to any changes in the physiology that are highly fundamental, like odontoblast cell differentiation and other secretory activity. The aim of this review is to assess the role of cathelicidins based on their capacity to heal wounds, their immunomodulatory potential, and their ability to stimulate cytokine production and stimulate immune-inflammatory response in pulp and periapex. Accessible electronic databases were searched to find studies reporting the role of cathelicidins in pulpal inflammation and regeneration published between September 2010 and September 2020. The search was performed using the following databases: Medline, Scopus, Web of Science, SciELO and PubMed. The electronic search was performed using the combination of keywords “cathelicidins” and “dental pulp inflammation”. On the basis of previous studies, it can be inferred that LL-37 plays an important role in odontoblastic cell differentiation and stimulation of antimicrobial peptides. Furthermore, based on these outcomes, it can be concluded that LL-37 plays an important role in reparative dentin formation and provides signaling for defense by activating the innate immune system.

Effects of Telmisartan, an AT1 receptor antagonist, on mitochondria-specific genes expression in a mouse MPTP mode

Frontiers in Bioscience-Landmark

Bipul Ray, Girish Ramesh, Sudhir Rama Verma, Srinivasan Ramamurthy, et al

Background: Mitochondrial dysfunction plays a crucial role in Parkinson's disease (PD) pathogenesis. The present study was undertaken to investigate the effects of Telmisartan (TEL), an angiotensin II type 1 receptor (AT1R) blocker, on the mitochondria-specific genes expression in a mouse model of Parkinsonism.

Materials and methods: Mice were divided into 5 groups with 6 in each; Group I received 0.5% CMC (control) + saline, Group II received 0.5% CMC + 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) (positive control), Group III & IV received MPTP + TEL 3 and 10 mg/kg, p.o. respectively, Group V received TEL 10 mg/kg, p.o. (drug control). MPTP was given 80 mg/kg intraperitoneal in two divided doses (40 mg/kg × 2 at 16 h time interval). Vehicle or TEL was administered 1 h before the MPTP injection. Motor function was assessed 48 h after the first 263 dose of MPTP and animals were euthanized to collect brain.

Results: Mice intoxicated with MPTP showed locomotor deficits and significant upregulation of α-synuclein (α-syn), downregulation of metastasis-associated protein 1 (MTA1), and Ubiquitin C-terminal hydrolase L1 (UCHL1) in the substantia nigra pars compacta (SNpc) and Striatum (STr) regions of brains. In addition, MPTP intoxication down-regulated mitochondria-specific genes such as DJ1, PTEN-induced putative kinase 1 (PINK1), Parkin, enriched with leucine repeats kinase 2 (LRRK2) gene expfression. Pre-treatment with TEL restored locomotor functions and upregulated PINK1, Parkin, LRRK2, DJ-1, MTA1 and UCHL1.

Conclusion: The present study evidence that TEL has the ability to improve mitochondrial functions in PD.

An Effective Anticancer Nano-approach for Melanoma and Breast Cancers Using Annona muricate Gold Nanoparticles

Acta Scientific Pharmaceutical Sciences

Imran, Muhammad, Ghaleb Husseini, Nahid S. Awad, Vinod Paul, Babiker M. El-Haj, et al

Chemotherapy is preferred for the treatment and management of cancer; however, its efficacy is hindered by the off-target side effects of the currently used synthetic drugs. Thus, anticancer drugs with higher safety and efficacy from renewable resources are needed. Nanostructured particles can enhance the drug specificity for target tissues, thus enhancing their clinical efficacy and safety. The synthesis of Annona muricata gold nanoparticles is reported for enhancing its anti-cancer potential. Green nanoparticles were synthesized through reduction of gold with Annona muricata followed by their extensive characterization through atomic force microscope, UV-spectrophotometer, zetasizer, and FT-R. They were investigated for their anticancer activity against two melanoma and one breast cancer cell line. The nanoparticles were rounded in shape and were monodispersed with 89.34 ± 2.76 nm size and - 22.41 ± 0.27 zeta potential. FT-IR study showed the hydroxyl and carbonyl groups of Annona muricata were involved in the stabilization of nanoparticles. The extract anticancer activity significantly improved against all cancer cells upon loading on the surfaces of the synthesized NPs. The findings suggest that Annona muricata gold nanoparticles can lead to promising therapeutic anticancer results, however, to reveal their anticancer effectiveness at molecular levels, further in vivo studies are required.

Bioavailability, Bioequivalence, and Pharmacokinetics: Clinical Effectiveness in Drug Development

Acta Scientific Pharmaceutical Sciences
Ghazi M E Hussein, Heyam Saad Ali, Babiker M Elhaj

Bioequivalence has also been referred to as comparative bioavailability. The concept of bioequivalence started gaining an increased attention during the last three decades, after it became evident that some marketed products containing the same amount of drug and marketed in the same dosage form exhibited marked differences between their therapeutic responses. In many instances, different therapeutic responses observed with these products were correlated successfully to dissimilar levels of drug concentration in the plasma, which was caused mainly due to differences in the rate of absorption of drug from these products. It is now very well established that the rate and extent to which an administered drug dose, to cause a systemic effect, must reach systemic circulation first, therefore its bioavailability depends on a number of very important factors. Although, the previous revisions specify comparison of pharmaceutical equivalents. It is obvious that pharmaceutical alternatives are also included because the comparison here is also between therapeutic drug ingredients as well.

Conclusion: Bioavailability testing for all products is economically difficult, and for some drugs such studies may not necessarily be essential. The question of determining bioavailability, however, is of particular interest for drug products which fall into distinct categories.

Characterization of Drug Delivery Particles in Pharmaceutical Disperse Systems

Systematic Reviews in Pharmacy 12, no. 11 (2021): 3553-3562.
Hussein, Ghazi ME, Babiker M. Elhaj, and Heyam Saad Ali

This review focuses on micromerties which is the science and technology of small particles. Pharmaceutical particle and powder characterization is key to pharmaceutical manufacturing processes and products as they often involve bulk powders in pharmaceutical dispersed systems. Particle size and powder properties will influence physical properties, such as the flowability of a powder, and in turn, will impact processing, blending, dissolution, delivery and bioavailability. Moreover, the appropriate selection of methods and particle engineering technologies of their production, characterization, are critical issues need considerations. Furthermore, optimization of their production process along with the drug/excipient particles, can provide insight understanding of their in vivo behaviour. In particular, characterization techniques for particle size distribution and morphology, drug loading structure of matrix components, porosity, particle surface chemistry, surface charge, are discussed in this review.

Synthesis of novel biocompatible resorcinarene based nanosized dendrimer-vesicles for enhanced anti-bacterial potential of quercetin

Journal of Molecular Liquids
Rehman, Khadija, Imdad Ali, Babiker M. El-Haj, Tasmina Kanwal, Rukesh Maharjan, at al

Resorcinarene based macrocycles has attained remarkable attention in the field of drug delivery because of their self-assembly and unique topology. The current work is based on the synthesis of new resorcinarene based macrocycle (Benzyloxy Macrocycle, BM) to enhance the therapeutic efficacy of quercetin (QRT). The synthesized BM was characterized through Mass, 1H NMR, 13C NMR and FT-IR spectroscopy and investigated for their biocompatibility using cytotoxicity and hemolysis assays. The critical concentration of association (CCA) of BM was determined using UV-Vis Spectrophotometer. The QRT loaded BM dendrimer-based nano-vesicles were characterized for size, poly dispersity index (PDI), zeta potential and surface morphology. The anti-bacterial potential of QRT loaded dendrimersomes were studied against multi drug resistant (MDR) S. aureus. The results of the study revealed that the synthesized compound was highly biocompatible as less hemolysis and cytotoxicity was observed. The QRT loaded vesicles revealed smaller size of around 225.5 ± 16.31 nm with 88 ± 1.52% encapsulation of QRT with controlled and sustained drug release profile. The MIC value of QRT significantly decreased to136 µg/mL after being encapsulated in BM nano-vesicles. The antibacterial efficacy of QRT loaded BM nano-vesicles was further authenticated by the AFM images which showed the complete distortion of cell surface morphology of bacteria. Findings of this research work suggest that the synthesized resorcinarene macrocycle have the ability to enhance the therapeutic potential of QRT.

Captopril: An Overview of Discovery, Development, and Post-marketing: Surveillance as an Effective Anti-hypertensive Drug.

Acta Scientific Pharmaceutical Sciences
Babiker M Elhaj, Farah Hamad Farah and Heyam Saad Ali

Captopril, the first angiotensin-converting enzyme (ACE) inhibitor was discovered through random screening of 2,000 chemical structures, by E. R. Squibb and Sons Pharmaceuticals. Then patented and developed 1980, to the marketed product Capoten. At a daily dose of 400-1000 mg, the drug showed significant anti-hypertensive activity in patients through enhancing plasma rennin activity, decreasing aldosterone in plasma and elimination of ACE activity. Dose was decreased to 50-150 mg/day after drug resistance was recognized in first 200 patients treated with captopril at the initial dose. Captopril pharmacodynamics and pharmacokinetics parameters were established through continuous clinical trials in human subjects. Initial post-marketing study found it safe and effective for treatment of mild hypertension and early cardiac failure. However, recent studies reveal different adverse events in hypertensive patients treated with captopril.

Concepts, Current Status, Approaches in Transdermal Drug Delivery System Technologies

Systematic Reviews in Pharmacy
Ghazi ME Hussein, Babiker M Elhaj, Heyam Saad Ali

The transdermal patch refers to the medical adhesive area which is kept on a human skin for the transition of a particular drug dosage across human skin to bloodstream. The essence of this activity is to prop up healing to the injured section on the body. The patch allows a controlled release of medication in the bloodstream, both via the porous polymeric membrane film covering the drug reservoir and via body temperature dissolving bony stratum of the medicine rooted in the adhesive or the paste. The film can be either in in form of a solid polymeric material or a residual film. The former form allows a sustained release while the other exhibits a rapid absorption is the leverage which the Transdermal medication technique has over other routes of therapeutic delivery like topical, oral, intramuscular, intravenous and others. Transdermal drug transmission enables steady flow of the drug in question into the body of the patient to make room for a sturdy profile of the blood level. This normally results into a reduced general side effect which means an improved effectiveness over diverse forms of dosages. The major aim of the Transdermal delivery technique is transition of medication into a universal circulation via the outer layer of the body at a programmed rate with negligible intra-patient as well as inter-patient variations.

Metabolic-N-Dealkylation and N-Oxidation as Elucidators of the role of alkylamino moieties in Drug Molecules acting on Various Receptors

Molecules
Eh-Haj, Babiker M.

Metabolic reactions that occur at alkylamino moieties may provide insight into the roles of these moieties when they are parts of drug molecules that act at different receptors. N-dealkylation of N,N-dialkylamino moieties has been associated with retaining, attenuation or loss of pharmacologic activities of metabolites compared to their parent drugs. Further, N-dealkylation has resulted in clinically used drugs, activation of prodrugs, change of receptor selectivity, and providing potential for developing fully-fledged drugs. While both secondary and tertiary alkylamino moieties (open chain aliphatic or heterocyclic) are metabolized by CYP450 isozymes oxidative N-dealkylation, only tertiary alkylamino moieties are subject to metabolic N-oxidation by Flavin-containing monooxygenase (FMO) to give N-oxide products. In this review, two aspects will be examined after surveying the metabolism of representative alkylamino-moieties-containing drugs that act at various receptors (i) the pharmacologic activities and relevant physicochemical properties (basicity and polarity) of the metabolites with respect to their parent drugs and (ii) the role of alkylamino moieties on the molecular docking of drugs in receptors. Such information is illuminative in structure-based drug design considering that fully-fledged metabolite drugs and metabolite prodrugs have been, respectively, developed from N-desalkyl and N-oxide metabolites.

Herbal products containing aristolochic acids: A call to revisit the context of safety

MingJournal of Herbal Medicine
Ang, Li Pei, Pit Wei Ng, Yen Loong Lean, Yaser Mohammed Al-Worafi, at al

Herbal products are used globally for their perceived health benefits, and as a complement to alternative therapy to Western medicines. Herbal products can be beneficial, although they can also be harmful in several circumstances. Aristolochic acids (AA) are a compound that is abundant in Aristolochia plants. Previous studies have reported that AAs exert several therapeutic effects and have been commonly used to treat a variety of illnesses, such as eczema, pneumonia, stroke, hepatitis, snakebites, arthritis, gout and coronary artery diseases. AAs, thus, are widely used in traditional and local medicines and herbal products. Unfortunately, the intake of AAs has been linked to kidney failure, as well as cancers of the urinary tract. A direct association between use of AAs and hepatocellular carcinomas has been established. According to the International Agency for Research on Cancer (IARC), AAs are classified into Group 1, which indicates there is sufficient evidence that they cause cancer in humans. Given uncontrolled adulteration of herbal products, along with a decreasing trend in clinical investigations into products containing AAs, adverse events due to exposure to Aristolochia herbs should be given much more attention. Even though the latest evidence has concretely proven that exposure to AAs is widespread throughout countries and regions such as China, South Korea, Japan, Southeast Asia, Europe and North America, the public awareness and attention given by physicians and native healers is not very encouraging. The toxicity and adverse drug events associated with AAs should be investigated thoroughly. Further law enforcement to restrict the sale and use of products containing AAs is warranted.

Mobile health apps on COVID-19 launched in the early days of the pandemic: content analysis and review

JMIR mHealth and uHealth

Ming, Long Chiau, Noorazrina Untong, Yaser Mohammed Al-Worafi et al.

Background: Mobile health (mHealth) app use is a major concern because of the possible dissemination of misinformation that could harm the users. Particularly, it can be difficult for health care professionals to recommend a suitable app for coronavirus disease (COVID-19) education and self-monitoring purposes.

Objective: This study aims to analyze and evaluate the contents as well as features of COVID-19 mobile apps. The findings are instrumental in helping health care professionals to identify suitable mobile apps for COVID-19 self-monitoring and education. The results of the mobile apps' assessment could potentially help mobile app developers improve or modify their existing mobile app designs to achieve optimal outcomes.

Methods: The search for the mHealth apps available in the android-based Play Store and the iOS-based App Store was conducted between April 18 and May 5, 2020. The region of the App Store where we performed the search was the United States, and a virtual private network app was used to locate and access COVID-19 mobile apps from all countries on the Google Play Store. The inclusion criteria were apps that are related to COVID-19 with no restriction in language type. The basic features assessment criteria used for comparison were the requirement for free subscription, internet connection, education or advisory content, size of the app, ability to export data, and automated data entry. The functionality of the apps was assessed according to knowledge (information on COVID-19), tracing or mapping of COVID-19 cases, home monitoring surveillance, online consultation with a health authority, and official apps run by health authorities.

Results: Of the 223 COVID-19–related mobile apps, only 30 (19.9%) found in the App Store and 28 (44.4%) in the Play Store matched the inclusion criteria. In the basic features assessment, most App Store (10/30, 33.3%) and Play Store (10/28, 35.7%) apps scored 4 out of 7 points. Meanwhile, the outcome of the functionality assessment for most App Store apps (13/30, 43.3%) was a score of 3 compared to android-based apps (10/28, 35.7%), which scored 2 (out of the maximum 5 points). Evaluation of the basic functions showed that 75.0% (n=36) of the 48 included mobile apps do not require a subscription, 56.3% (n=27) provide symptom advice, and 41.7% (n=20) have educational content. In terms of the specific functions, more than half of the included mobile apps are official mobile apps maintained by a health authority for COVID-19 information provision. Around 37.5% (n=18) and 31.3% (n=15) of the mobile apps have tracing or mapping and home monitoring surveillance functions, respectively, with only 17% (n=8) of the mobile apps equipped with an online consultation function.

Conclusions: Most iOS-based apps incorporate infographic mapping of COVID-19 cases, while most android-based apps incorporate home monitoring surveillance features instead of providing focused educational content on COVID-19. It is important to evaluate the contents and features of COVID-19 mobile apps to guide users in choosing a suitable mobile app based on their requirements.

Patients' beliefs toward generic medication in Yemen

Journal of Generic Medicines
Jaber, Ammar Ali Saleh, Yaser Mohammed Al-Worafi, and Abdullah Ahmed Dhabali

Purpose: This study aims to explore patients' knowledge and beliefs toward generic medicines and identify the factors affecting their beliefs toward them in Yemen.

Patients and methods: A cross-sectional study was conducted from April 1 to July 1, 2016. A self-administered questionnaire was distributed to 590 adult patients in Sana'a. The data were analyzed using Statistical Package for the Social Sciences® (IBM SPSS) version 26 for Windows.

Results: Overall, 370 patients participated in this study. The study identified that a majority of the respondents did not know the similarities and differences between generic and branded medication and had negative beliefs toward generic medication. The study identified the factors contributing to the patients' beliefs toward generic medication.

Conclusion: Yemeni patients had poor knowledge and negative beliefs toward generic medication. Educational programs provided to patients and healthcare professionals regarding generic medication can improve patients' knowledge and correct their beliefs in this regard.

Assessment of Anti-Diabetic Medications Adherence among Diabetic Patients in Sana'a City, Yemen: A Cross Sectional Study

Journal of Pharmaceutical Research International
Othman, Gamil, Faisal Ali, Mohamed Izham Mohamed Ibrahim, Yaser Mohammed Al-Worafi, Mukhtar Ansari, and Abdulsalam M. Halboup.

Background: Lack of adherence to anti-diabetic medications use is linked with suboptimal glycemic control which in turn leads to increase rate of diabetic complications. The adherence to anti-diabetic medications among adult diabetic patients in Sana'a city has not been yet evaluated.

Objective: This study, therefore, assessed the extent to which diabetic patients are adherent to their antidiabetic medications and explored the factors underlying such adherence attitude in Sana'a City, Yemen.

Methods: A cross-sectional method was conducted among a sample of 365 diabetic patients attending public and private hospitals from March to April 2017 in Sana'a City-Yemen. Random patients were selected and data regarding their treatment adherence were obtained using a questionnaire. Adherence to diabetes medications was measured using medication adherence index followed by structured interviews. Descriptive analysis was used to compare between different groups of diabetic patients. Bivariate analyses were conducted to evaluate the associations between clinical variables.

Results: The cross-sectional study included 365 patients (263 males; 102 females). A high level of medication adherence rate to anti-diabetic drugs in the present study was (70%). The adherence rate was not similar in both genders where males were more adherent than females. The most common reason for non-adherence was forgetfulness (n= 67; 61%). While the lowest factor for non-adherence was associated with ineffective (n= 7; 6%). Adherence was strongly associated with diabetes duration, monthly income, blood sugar monitoring, communication with physician, and patient's knowledge regarding importance of medication use ($p < 0.05$).

Conclusions: The degree of adherence in patients with diabetes in Sana'a to anti-diabetic medication was shown to be mostly suboptimal. The medication adherence levels are still crucial strategy for optimal treatment against diabetes. However, additional studies on strategies to improve adherence rate and health care should be carried out in the future.

Knowledge, Attitude and Experience of Pharmacist in the UAE towards Pharmacovigilance

Research J. Pharm. and Tech

Yaser M. AlWorafi, Sanah Hasan, Nageeb M. Hassan, Ahmed A. Gaili

Objectives: The objective of the current study was to investigate the pharmacist's knowledge, attitude, practice and experience towards pharmacovigilance.

Methods: A cross-sectional study was conducted among the pharmacists in UAE by using a validated self-administered questionnaire.

Results: A total of 230 pharmacists were interviewed. However only 185 questionnaires were completed and analyzed. Of the 185 respondents (59.5%) were male. Pharmacist's age mean was 32.15 ± 6.86 years. Fifty-five (29.7%) pharmacists in this study had good knowledge, while 91 (49.2 %) pharmacists had moderate knowledge and 39 (21.1 %) pharmacists had poor knowledge towards pharmacovigilance, ADRs and ADRs reporting. The finding of this study showed that 82 (44.3 %) of the pharmacists were detected and seen ADRs in their practice at least once. A total of 59 ADRs were seen by the pharmacists in this study. The most common ADRs they detected were gastritis (16 times), followed by allergy (12 times), then rash (8 times), anaphylactic shock (two times) and other ADRs (21). However, none of the detected ADRs were reported. The most barriers reported by pharmacists were lack of knowledge about reporting system. Factors to encourage ADRs reporting were enhancing awareness about reporting through attending courses or workshops, receiving educational materials and simplification of reporting procedures.

Conclusion: Majority of pharmacists in this study had positive attitude towards pharmacovigilance, ADRs and their reporting. Education and training programs are highly recommended to enhance awareness and improve the reporting of ADRs by pharmacists in UAE.

General Anxiety Predictors among Frontline Warriors of COVID: Cross-Sectional Study among Nursing Staff in Punjab, Pakistan

Arch Pharm Pract

Khan, Tahir Mehmood, Humera Tahir, Yaser Mohammed Al-Worafi, et al

COVID-19 pandemic has increased the generalized anxiety among nursing staff. This cross-sectional questionnaire-based study aimed to determine the generalized anxiety disorders among the nursing staff working in secondary and tertiary care hospitals in Punjab province, Pakistan. A GAD-7 scale was used to assess anxiety. Non-parametric statistics were applied to estimate the difference among the groups. Multiple regression model was adopted to explore the impact of covariates on the GAD-7 score. A total of 133 nurses responded to this survey. It was revealed that being female (7.38±4.20, p=0.032) and having an age of ≥ 31 years (7.68±5.14) might lead to a higher GAD-7 score. 19.6% of the respondents had a high level of generalized anxiety (GAD-7 score ≥ 10), and about 49.6% were falling in the range of mild anxiety. Female nursing staff have the probability of higher GAD-7 score up to 15% [0.148(-0.450 – 4.697), p= 0.049]. Job experience, especially being new to the field (≤ 3 years) might increase the likelihood of having a higher GAD-7 score by 14%. In conclusion, 19.6% of the respondents were meeting the GAD-7 criteria of moderate-severe level of generalized anxiety and depressive disorder. Being female, having less job experience, and no training on how to handle COVID patients were revealed to the main factors influencing the GAD-7 score. Risk of getting COVID, transmission of COVID to family members through them, and uncertainty about the consequence of COVID in Pakistan were some of the common stressors reported by the nurses who participated in this study.

Public Perception About the Zika Virus in Working Professionals: A Qualitative Inquiry

International quarterly of community health education
Choudhry, Fahad Riaz, Khadeeja Munawar, Yaser Mohammed Al-Worafi, et al

Aims: The Global Outbreak Alert and Response Network recently warned that the Zika virus-containing mosquitoes are being found in Pakistan and the health sector is on high alert. It is thus significant to understand public beliefs and perceptions of the Zika virus and vaccination in the current scenario of Pakistan.

Methods: Twenty semistructured qualitative interviews were conducted and analyzed through an inductive approach to analysis.

Results: The findings were presented in three main categories which were coded: Reality vs. Conspiracy, Vaccination Concerns, and Public Worries. The majority believed that the Zika virus is a real problem and that authorities might be trying to hide the Zika cases in Pakistan. Moreover, they believed that health organizations are being incompetent by failing to take timely remedial measures to manage the Zika. However, 20% have an opposing view and believed that the Zika virus is a conspiracy against Pakistan from the West.

Conclusion: Overall, most participants were concerned about the lack of treatment and preventive methods and emphasized the need to create awareness among the public. It is observed that the participants' perceptions ranged from perceiving the Zika virus as real to as a conspiracy.

Comparative Analysis of Chronic Kidney Disease Associated Pruritus: A Multi-Ethnic Study among Patients on Hemodialysis

Archives of Pharmacy Practice

Rehman, Inayat Ur, Lee Learn Han, Tahir M. Khan, Yaser Alworafi, and Amal Suleiman

To date, no study has compared the prevalence of chronic kidney disease-associated pruritus (CKD-aP) among patients on hemodialysis in Pakistan (a developing country with poor health resources) and Malaysia (a newly industrialized country with adequate health resources). The aim was to compare CKD-aP between Pakistani and Malaysian patients on hemodialysis and factors associated with CKD-aP. Pakistani patients were recruited from July 2016 to April 2017 from two tertiary hospitals in Peshawar and Rawalpindi. Whilst Malaysian patients were recruited from February to September 2017 from a tertiary hospital and its affiliated dialysis centers in Kuala Lumpur. A total of 354 Pakistani and 334 Malaysian patients were recruited (response rate=100%). The CKD-aP prevalence was 74% and 61.3% in Pakistan and Malaysia, respectively. Pakistani patients had poorer PSQI, and health-related quality of life (HRQOL) scores compared to Malaysian patients. The prevalence of CKD-aP and the PSQI score wasslightly higher in Pakistan than in Malaysia. CKD-aP was significantly associated with PSQI score and HRQOL in both populations.

IV. College of Business Administration

The inconsistent effect of foreign exchange earnings on economic development of Fiji: the strategies and long run relationship through vector error correction modelling

International Journal of Economic Policy in Emerging Economies
Gyanendra Singh Sisodia, Alberto Ibanez and Murale Venugopalan

Foreign aid, foreign direct investment (FDI), exports and remittances result critical for the economic growth of countries that are geographically isolated from the rest of the world and located at disaster prone areas such as Fiji. The research proposes these variables might have a different impact in emerging economies, based on the current social, economic and political context of the recipient country. This implies that prior to allocating scarce resources, each country's framework should have been analysed to maximise their potential impact. For this study, we applied Johansen cointegration and vector error correction model (VECM) on time series data over the period of 1979-2017. The results reveal that the variables under study have a positive impact on the economic growth of Fiji. Furthermore, the combined effect of foreign aid and FDI provides synergies, increasing its positive effects. We recommend Fiji authorities to implement appropriate government policies that prioritise exports, foreign aid, FDI and remittances in the expressed order, in order to foster sustainable economic growth. We also present a policy framework through the integration of results of our study.

The role of culture on 2020 SARS-CoV-2 Country deaths: a pandemic management based on cultural dimensions

GeoJournal
Alberto Ibanez, Gyanendra Singh Sisodia

This study aims to analyze the role of cross-cultural country differences during a global pandemic. Based on country cultural dimensions and country economic indicators, the research proposes specific policies that might prove of value in order to manage and better respond to present and future critical events such as the 2020 SARS-CoV-2 outbreak. The methodology is based on multivariate analysis for the first set of countries and cross-country comparative analysis for the second set of countries. Research results reveal the critical role of the cultural dimensions individualism, power distance, masculinity, long-term orientation and indulgence, along with the country economic context in the magnitude of the consequences of a global pandemic within a country specific context. Based on these results, the study proposes policies adjusted to the countries specific cultural and economic frameworks in order to promote the most effective and efficient management of a critical event such as a global pandemic.

V. College of Humanities and Sciences

Attitudes of Jordanian Youths Toward Marriage and Its Relationship with Some Variables

Abaad Journal
Dr Faisal Ibrahim Mohammad Al- Matalka

The study aimed at investigating the attitudes of Jordanian youths toward marriage and its relationship with some variables such as gender, age, place of residence, level of education and income. For this purpose, a questionnaire was designed which consisted of two parts: the first part included the following variables: gender, age, place of residence, level of education and income. The second part included (44) items and consisted of four dimensions, selection of partner, forms of marriage, outlook toward marriage, and the relationship between the couple and their families. A simple random sample of (1882) students was selected. The results revealed that: there are no statistically significant differences in the attitudes of Jordanian youths toward marriage according to the following variables: sex, age, place of residence, educational level and income. The results also showed that the selection of a partner that is favorable to the youth is that which is based on love. Also, it was found that the majority of respondents supported early marriage because they think that it protects them from sinning. Regarding outlook toward marriage, the majority of respondents felt that marriage results in financial fatigue, and for the relations between the couple and their families, they were encouraged to waive certain rights when dealing with a life partner to avert problems. In addition, they believe that residing near the family leads to marital problems. The study suggested some of the following recommendations: the need to activate the role of social workers and psychologists in Jordanian universities, the media must take these issues seriously and more research is needed to identify the most important problems facing the young people who are planning for marriage.

The Influence of The Religiosity Map After 1989 on the Sufi Brotherhoods in Sudan

PALARCH'S JOURNAL OF ARCHAEOLOGY OF EGYPT
Osman Ahmed, Asma Ahmed, Elsayed Mohamed, Nserelden Ali, Emad Eldin Omer

The research problem relates to two aspects. The first concerns the consciousness of Sufism by changing the image type towards them, and the second relates aspect of Sufi awareness of the change towards them is the tendency of Sufi sheikhs to change the traditional image of the Sufi Sheikh. The research study the problem through a number of changes brought about by the period of the rule of political Islam in Sudan at the period from 1989 to date. One of the most important research results is that societal and political reality has imposed great transformations in the image of the traditional mystic in society

التسويق الاجتماعي وتحقيق استدامة الخدمات الاجتماعية بالمنظمات غير الحكومية

مجلة كلية الخدم الاجتماعية للدراسات والبحوث الاجتماعية
د. رمضان إسماعيل عبد الفتاح

هدفت الدراسة الى تحديد دور التسويق الاجتماعي فى تحقيق استدامة الخدمات الاجتماعية بالمنظمات غير الحكومية، وتنتمي الدراسة الحالية إلي نمط الدراسات الوصفية التحليلية، وتعتمد الدراسة الحالية علي منهج المسح الاجتماعي الشامل أعضاء مجالس إدارات المنظمات غير الحكومية المهتمة بالتسويق الاجتماعي، أجريت الدراسة بالمنظمات غير الحكومية المهتمة بالتسويق الاجتماعي بمحافظة الإسماعيلية وعددهم (12) مؤسسة، وبلغ مجتمع الدراسة (122) مفردة من الاخصائيين الاجتماعيين وأعضاء مجالس إدارات المنظمات غير الحكومية المهتمة بالتسويق الاجتماعي، وتوصلت نتائج الدراسة الميدانية وفقاً لترتيب الأولوية من وجهة نظر عينة الدراسة الى وجود فروق ذات دلالة إحصائية على المقياس ككل عند مستوى 0.01. ما عدا المحور الثالث والمتمثل في معوقات التسويق، فقد جاءت مستوى الدلالة أكبر من 0.05 مما يدل على عدم وجود فروق ذات دلالة إحصائية بين الاستجابات.

The study aimed to determine the role of social marketing in achieving the sustainability of social services in non-governmental organizations, and the current study belongs to the style of descriptive and analytical studies, and the current study is based on the approach of a comprehensive social survey of members of the boards of directors of non-governmental organizations interested in social marketing, the study was conducted by NGOs interested in marketing Social workers in Ismailia Governorate, their number is (12) institutions, and the study population reached (122) individual social workers and members of the boards of directors of non-governmental organizations interested in social marketing, and the results of the field study, according to the priority order from the point of view of the study sample, indicated that there are statistically significant differences on the scale as a whole At the level of 0.01. With the exception of the third axis, which is represented by marketing impediments, the level of significance was greater than 0.05, indicating that there were no statistically significant differences between the responses.

واقع تعليم الخدمة الاجتماعية إلكترونياً وآليات مقترحة لتطويره

مجلة دراسات في الخدمة لااجتماعية

د. أسماء أحمد

أصبح التعليم الإلكتروني متطلباً هاماً وضرورياً، لضمان استمرار العملية التعليمية خاصة في أوقات الطوارئ والأزمات، حيث يتيح الفرصة لتوفير فرص المرونة الكافية وتخطي الحواجز الزمانية والمكانية والتي قد تقف عائقاً أحياناً أمام استمرار العملية التعليمية، لذلك هدفت الدراسة الحالية إلى تحديد واقع تعليم الخدمة الاجتماعية إلكترونياً، وإيجابيات وسلبيات تعليم الخدمة الاجتماعية إلكترونياً، ومن ثم التوصل إلى آليات مقترحة لتطويره، وقد اعتمدت الدراسة على استخدام منهج المسح الاجتماعي الشامل لطلاب قسم علم الاجتماع والخدمة الاجتماعية بجامعة العلوم والتقنية في الفجيرة وعددهم 94 مفردة، وقد توصلت الدراسة إلى أن مستوى واقع تعليم الخدمة الاجتماعية إلكترونياً كما يحدده الطلاب جاء مرتفعاً، وذلك من خلال حرص أساتذة الخدمة الاجتماعية على تشجيع الطلاب على المشاركة في المناقشات بشكل مستمر، متابعة انجاز الأعمال الأكاديمية لهم، وكذلك ارتفاع مستوى إيجابيات تعليم الخدمة الاجتماعية إلكترونياً من وجهة نظر الطلاب، وذلك من خلال سهولة الرجوع إلى المحاضرات مسجلة في أي وقت، والقدرة على متابعة الدراسة في أي مكان، وتقليل التكلفة والتخفيف من العبء المادي عند التنقل، كذلك أكدت الدراسة انخفاض مستوى سلبيات تعليم الخدمة الاجتماعية إلكترونياً من وجهة نظر الطلاب.

ارتقاء سلوك الإيثار في مراحل الطفولة المتأخرة والمراهقة المبكرة والمتأخرة

المجلة المصرية للدراسات النفسية

د . أحمد حسين الشافعي

استهدفت الدراسة استجلاء كيف يرتقي سلوك الإيثار بين مرحلتي الطفولة المتأخرة والمراهقة . وتكونت عينة الدراسة من 636 طفلا ومراهقا من طلاب المدارس (الذكور) في مدينة طنطا ، يمثلون ثلاث مراحل عمرية ؛ الطفولة المتأخرة (ن – ٢١٢) ، المراهقة المبكرة (ن - ٢١٢) ، المراهقة المتأخرة (ن - ٢١٢) . طبق عليهم مقياس الإيثار من إعداد الباحث . وتم ضبط متغيرات الذكاء والمستوى الاقتصادي - الاجتماعي . وتوضح النتائج أن مجموعة المراهقة المبكرة أفضل المجموعات في سلوك الإيثار ، في حين كانت مجموعة الطفولة المتاخرة أقل المجموعات. ولم تختلف المجموعات الثلاث بصورة دالة في متغير التعاطف ، بينما كانت مجموعة المراهقة المتأخرة أعلى المجموعات في سلوك المشاركة. وأخيرا كانت مجموعة المراهقة المبكرة أفضل المجموعات الثلاث في متغيرات التضحية .

Culture and sexual differences in impulsivity among university students

مجلة كلية الآداب جامعة الفيوم

Khaled Elsayed Ziada; Salaheldin Farah Bakhiet; Ahmed Al-Shafey

The aim of the present study was to examine Culture and sexual differences in impulsivity among university students using The Barratt Impulsiveness Scale (BIS-11). In this study we used two samples, one from Egyptian (N = 450) and one from Saudi Arabian (N = 396) university students, to close this gap and to observe differences between sexes and cultures. Cultural differences were found with on average impulsivity in Saudi Arabia than in Egypt. Sex differences differed not only in magnitude but also in direction. Males showed on average higher impulsivity in Saudi Arabia but females in Egypt. Differences were larger between cultures than between sexes. Indications for further research are discussed.

Simple epidemic peaks of Coronavirus Disease in UAE, 2020

Research Journal in Mathematics, Econometrics and Statistics

Osama Rashwan, PH.D.

In 1927, the Susceptible Infected and Recovered (SIR) Mathematical Modelling originally studied by Kermack and McKendrick (A contribution to the mathematical theory of epidemics in the Proceedings of the Royal Society London Ser. A), The paper became a classic in infectious disease epidemiology and has been cited innumerable times. Using the data offered by Ministry of Health and Prevention, the coefficient in the system of Ordinary Differential Equations that represent the United Arab Emirates' SIR Mathematical Modelling of COVID-19, using Microsoft Excel, and MATLAB Software is used consequently to solve and graph the solution. The idea may be extended to be website calculator or a Mobile Application giving the Infection Rate Ro, the Contact Ratio q, and the Maximum percentage of population expected to be infected linked to the daily official data website.

An In-Vitro Comparative Analysis on Root Canal Transportation, Centering Ability, Angle of Curvature Using XP-Endo Shaper and WaveOne Gold Rotary Systems-A CBCT Study

Systematic Reviews in Pharmacy

Asok Mathew, Abdullatif Burahmah, Salem Abu Fanas, Okba Mahmoud, Mohamed Abdullah Jaber, Prabhu Manickam Natarajan, Ahmed Radeideh

Background: In this study we highlight the difference between two recent single file endodontic systems XP-endo Shaper by FKG and WaveOne Gold by Dentsply by measuring their efficiency through assessing the centering ability, canal transportations, preparation time and changes in canal curvature on resin endodontic blocks using Cone Beam Computed Tomography.

Material and Methods: Fourteen resin endodontic blocks are used for each system. The assessment was done by comparing and measuring the data collected of pre-instrumentation and post-instrumentation CBCT axial and sagittal images to assess the centering ability, canal transportation, preparation time and changes in canal curvature. These measurements were taken in 3mm ,5mm and 7 mm from the apical exit of the endodontic block used.

Results: The mean Canal Transportation of XP System (Group A) in 3mm, 5mm and 7mm sections measured with values (-.5214, -.2714 and -.02140) respectively. The mean transportation of WaveOne Gold system (Group B) in 3mm, 5mm and 7mm in sections with values (-.3214, -.2571 and -.1143.) respectively, whereas the mean centering ability of XP System (Group A) in 3mm, 5mm and 7mm sections measured with values (.0714, -.6131 and -.9881) respectively. The mean transportation of WaveOne Gold system (Group B) in 3mm, 5mm and 7mm sections is given as (-.3255, -.6310 and -.6429) and there was no significant difference noted in centering ability and canal transportation between the two systems. The mean root canal preparation time showed no statistical difference between the two systems employed. There was statistical difference noted in the changes in pre- and post-curvatures of the canal between two systems studied.

Conclusion: With our limitation in sample size, it was concluded that reciprocation motion in WaveOne Gold system gave better results in canal transportation and centering ability in the simulated apical part in endo-blocks than continues motion rotary preparation in XP endo shaper system. WaveOne Gold produced lesser canal transportation in the apical 3rd while XP endo shaper produced less canal transportation and centering ability in the middle 3rd simulated endo-blocks.

VI. College of Law

الضوابط القانونية والشرعية والطبية لتشريح الجثث البشرية لأغراض تعليمية " دراسة علمية شرعية قانونية

مجلة الأمن والقانون أكاديمية شرطة دبي
أ.د. خلف محمد المحمد

(حكم تشريح جثث الموتى لأغراض تعليمية) ما هو الموقف الشرعي منها؟ وهل يجوز ذلك أم لا ؟ وهذه هي مشكلة البحث ، وذلك لأن الإنسان أكرم مخلوق على وجه الأرض ، وهو خليفة الله في أرضه ، ليعمر الكون ، ويحيا فيه حياة كريمة ، لذا طلب منه أن يكون مراعيا ومحافظا على حياته حتى يقوم بواجبه على أكمل وجه، وبما أن الإنسان بشر يعتريه الحر والبرد والصحة والسقم ، شرع الله العلاج ، بل أوجبه عليه في حالات معينة ، ونظرا لتقدم علم الطب ووسائل العلاج ، ظهرت أسئلة كثيرة تصاحب هذا العلاج ، حول مدى مشروعية التشريح ونقل الأعضاء وزرعها وغير ذلك ، وقد اهتمت مراكز البحث ودور الإفتاء والمجامع الفقهية في بيان مسائل الأمور الطبية ، مثل : أحكام الجراحة بأنواعها ، وطفل الأنبوب ، وزراعة الأعضاء ... وغير ذلك من المسائل العصرية ، حيث عقدت المؤتمرات والندوات في مختلف البلاد ، ودعي إليها المختصون من الفقهاء والأطباء وأساتذة الجراحة والتشريح في كليات الطب ، ووصلت الكتب والبحوث والندوات إلى العشرات . ، لأن الإسلام حث على العلم ورغب فيه ، ورتب عليه الأجر والمثوبة ، بل فتح الأفاق أمام البحث في علاج كل مرض بقوله صلى الله عليه وسلم " إن الله ما أنزل داء إلا وأنزل له شفاء ودواء "

ومن الواجب عليّ مع كثرة البحوث والكتب في هذا الموضوع ، أن أبين الموقف الشرعي من تشريح جثث الموتى لأغراض تعليمية ، وذلك بإيجاز كافي يقنع المختص ، ويغني غير المختص عن مطالعة البحوث المطولة والكتب المبسوطة في هذه المسألة ، حيث من الصعوبة بمكان أن يقرأ الطبيب كتابا يتجاوز المائة صفحة في هذه المسألة ، وفيه من المناقشات ما لا يحتاجه ، لذا سيكون هذا المبحث مركزا ، وهو مكون من : تمهيد ، و أربعة مطالب : والزميلان الآخران يغطيان الجانب القانوني والجانب الطبي .

التمهيد : أبين فيه التعريف بهذه المسألة ، وأساس البحث فيها ، وكيفية معالجتها

المطلب الأول : تحرير محل النزاع وتحديده

المطلب الثاني : أقوال الفقهاء في هذه المسألة

المطلب الثالث : أدلة الأقوال ومناقشتها ، وبيان القول الراجح

المطلب الرابع :ضوابط مشروعية التشريح عند المجيزين له

الخاتمة : وفيه أهم النتائج والتوصيات . ثم ذكر المصادر والمراجع

اشتراط وجود الولي في عقد الزواج وأثره على رضا المرأة - دراسة فقهية

مجلة الأمن والقانون أكاديمية شرطة دبي

أ.د. خلف محمد المحمد

الولاية على المرأة في النكاح هي مظهر تكريم للمرأة وتشريف ، حيث نصب الشارع لها ممثلا يدافع عنها ويحامي عن حقوقها في عقد لو هي تولته لنفسها لغلبها الحياء فأسقطت كثيرا من حقوقها ، هذا في الجانب المادي ، أما في الجانب الآخر ، وهو اختيار الزوج المناسب صاحب الخلق والدين الذي يصون المرأة ويسعدها ، فإن الولي أقدر على ذلك ، لأنه في الغالب أكثر تجربة من المرأة وتبصرا بحقائق الأمور ، ومعرفة بالناس ، بالسؤال والخلطة ، وقد تغلب العاطفة المرأة فتتعلق بالشاب الذي يطلبها لمظهره دون روية ، حيث قد يغلبها رهافة الحس عن رؤية مصلحتها الحقيقية من خلال مظهر قد يكون متكلفا ، لذا احتاجت المرأة إلى من يقف بجانبها في اختيار الرجل المناسب ، من هنا جاء هذا البحث ليبين الموقف الشرعي والقانوني من شرط الولي في عقد الزواج ، ومدى أثره على الحد من حرية المرأة في اختيار زوجها ، وهل له الاستقلال بعقد زواجها من دون رضاها ، أو هي لها الاستقلال بعقد زواجها من دون علم أو رضا وليها ؟ وهل يجوز له منعها من الزواج بمن ترغب وكان كفؤا لها ؟ وما الحل لو حصل هذا ؟

النظام القانوني لحماية البيانات الشخصية المعالجة إلكترونياً
دراسة تحليلية مقارنة في ضوء اللائحة الأوربية وبعض التشريعات ذات العلاقة

مجلة العلوم القانونية، جامعة عجمان

د. محمد حسن

تناول البحث الالئحة ألوربية رقم 2016/679 لحماية الأشخاص الطبيعيين فيما يتعلق بمعالجة البيانات الشخصية، وحرية نقل هذه البيانات والتي دخلت حيز النفاذ في 14 مايو 2018 لحماية البيانات الشخصية في سياق المعالجة التقنية لها .تشريعيا شامال بوصفها تنظيما وبين البحث المفاهيم ألساسية، والحقوق المقررة ألصحاب البيانات واالتزامات المفروضة على القائمين بمعالجة البيانات، والسلطة المختصة بإلشراف والمراقبة على معالجة البيانات، والجزاءات المترتبة على مخالفة أحكامها في دراسة مقارنة مع القانون الفرنسي والمصري وقانون مركز دبي المالي العالمي.

The research covered the European Regulation No. 679/2016 for protecting Natural Persons concerning the processing of personal data, and the freedom to transfer this data, which entered into force on May 14, 2018, as a comprehensive legislative tool for protecting personal data in the context of its technical processing. It highlighted the basic concepts and rights of data holders, the obligations imposed on data processors, the authority competent to supervise and control data processing, and the penalties for violating its provisions in a comparative study with the French and Egyptian laws and the DIFC law.

Penal Order: A comparative study

Journal Sharia and Law
Dr. Ameen Dahmash

Criminal courts suffer from the problem of accumulating cases and slow litigation procedures, and among the most important factors leading to this is the large number of people committing minor crimes that fall within the scope of misdemeanors and offenses. Alternatives penal order. Most of the legislations make the issuance of a criminal order in the hands of the summary judge at the request of the public prosecution. However, other legislations make issuing a criminal order the responsibility of the public prosecution instead of the judge, and this represents an addition to alternatives to a criminal case, and an improvement of the penal order system to terminate it, in the shortest time frame, and this would lead to the courts reducing the accumulation of cases, and shortening the time, Effort and expense.

The Emirati legislator adopts a procedural policy based on raising the efficiency of judicial work and speeding up its procedures to reduce the burden on the courts and save effort and expenses. To this end, in 2015 the one-day court initiative was launched, and it was supplemented by the penal order laws in the Emirate of Dubai and Ras Al Khaimah, then the legislator introduced new texts that were introduced. Federal Criminal Procedures Law, including the provisions contained in the criminal order in Law No. 17 of 2018 in Articles (332-345), by which it grants the Public Prosecution the authority to issue a criminal order.

The research discusses important issues related to the content and scope of the criminal order, the extent of the legality of its issuance by the Public Prosecution, whether this is consistent with the principle of “no punishment without a judicial ruling issued by a competent court”, and other issues related to its role in ending the criminal case with the shortest necessary frameworks. It depends on the analytical and comparative approach, by analyzing the texts regulating the penal order in the UAE law in comparison with the Egyptian and Yemeni laws, which also grant the Public Prosecution the authority to issue a criminal order.

It was divided into two sections, the first was devoted to the essence of the penal order, and the second, to the legal provisions regulating the penal order, and the study ended with a conclusion to the findings of the researcher, and the recommendations that he considered to be taken.

حوكمة استخدام الذكاء الاصطناعي في العمل القضائي: قراءة قانونية في الميثاق الأخلاقي الأوروبي "CEPEJ" في النظم القضائية وبيئتها "AI" بشأن استخدام الذكاء الاصطناعي

حولية مركز البحوث والدراسات الشرعية- كلية دار العلوم- جامعة القاهرة
د. إيناس الخالدي

هدفت الدراسة إلى محاولة تسليط الضوء على دور الميثاق الأخلاقي الأوروبي بشأن استخدام الذكاء الاصطناعي (AI) في النظم القضائية وبيئتها (CEPEJ) من واقع تجربتي القضائية بمحاكم المملكة الأردنية الهاشمية، وذلك من خلال ربط المبادئ الأخلاقية التي ركز عليها الميثاق، وواقع استخدام الذكاء الاصطناعي في البيئة القضائية، بهدف حوكمة هذا الاستخدام وإبراز الإشكاليات القانونية التي تمكن أن تظهر من وراء الاستخدام المفرط للذكاء الاصطناعي في العمل القضائي دون وضع ضوابط العدالة والمساواة واحترام حقوق المتقاضين في محاولة لتأطير استخدام الذكاء الاصطناعي في العملية القضائية

The study aimed to try to shed light on the role of the European Ethical Charter on the Use of Artificial Intelligence (AI) in Judicial Systems and their Environment (CEPEJ) from the reality of my judicial experience with the courts of the Hashemite Kingdom of Jordan by linking the ethical principles that the Charter focused on, and the reality of the use of artificial intelligence in the environment Judicial aiming to govern this use and highlight the legal problems that can arise from the excessive use of artificial intelligence in the judicial work without setting the rules of justice, equality and respect for the rights of litigants in an attempt to frame the use of artificial intelligence in the judicial process.

المتطلبات القانونية للبنوك الإسلامية الرقمية - النموذج الاماراتي

مؤتمر الشارقة الدولي الثالث في الاقتصاد الإسلامي
د. إيناس الخالدي

هدفت الدراسة إلى توضيح الأطر القانونية والتنظيمية لترخيص البنوك الاسلامية الرقمية في دولة الامارات العربية المتحدة. كما هدفت إلى تسليط الضوء على الاشكاليات القانونية التي قد تنجم من وراء ترخيص البنوك الإسلامية الرقمية ومحاولة تقديم حلول مبتكرة بهذا الخصوص. اعتمدت الباحثة في معالجة هذا الموضوع على المنهج الوصفي التحليلي توصلت الدراسة ان البنوك الاسلامية الرقمية من الداخلين الجدد في صناعة الخدمات المالية الاسلامية. وهذا يجعل الحاجة ملحة إلى وضع معايير واضحة لآلية عمل البنوك الاسلامية الرقمية وتنظيم الصيرفة الاسلامية الرقمية وهذا يستدعي تعديل الاطار القانوني المنظم للبنوك الاسلامية الرقمية للعمل على تعزيز كفاءتها وإثبات قدرتها على التنافس في السوق المالية إذ أن هناك العديد من العقبات التي تقف امامها.

التقييم القانوني للوثيقة الموحدة للتأمين على المركبات في دولة الإمارات العربية المتحدة -دراسة مقارنة

مجلة الشريعة والقانون

د. عيسى غسان الربضي

أصبحت حوادث المركبات تشكل خطراً كبيراً على أرواح الأشخاص وممتلكاتهم، ولهذا اتجهت دولة الإمارات العربية المتحدة منذُ عشرات السنوات، نحو الطريق الذي سارت عليه الغالبية العظمى من الدول العربية والأجنبية، وهو تنظيم التأمين الإلزامي من المسؤولية المدنية عن حوادث المركبات، فقد أصدر مجلس إدارة هيئة التأمين الوثيقة الموحدة لتأمين المركبات الصادرة بموجب نظام توحيد وثائق التأمين على المركبات بموجب القرار رقم (25) لسنة 2016. وتعدُّ هذه الوثيقة نظاماً قانونياً معدل للقرار الوزاري رقم (54) لسنة 1987 بشأن توحيد وثائق التأمين على السيارات، حيث أشار هذا القرار إلى الأخطار المغطاة والاستثناءات العامة التي لا يغطيها التأمين من المسؤولية المدنية التي لا تنتج عنها، أو تنشأ عن الحوادث التي تقع من المركبة المؤمن عليها. وعند البدء بتطبيق هذا التعديل على أرض الواقع خلال السنوات القليلة الماضية، ظهر العديد من السلبيات بهذا التعديل الذي شكَّل ضغطاً على هيئة التأمين بإجراء تعديلين على أحكام الوثيقة الموحدة: الأول كان خلال أقل من عام على مرور بدء تطبيقها، والثاني كان في عام 2018. لذا كان من المواجب معرفة أثر أحكام وثيقة التأمين الموحدة على حقوق كل من طرفي وثيقة التأمين، والمشكلات التي تعدُّ من معوقات تطبيق الوثيقة كما يجب، والتي توثر بالسلب على المسؤولية المدنية للمؤمن. وكان ذلك من خلال تقييم شروط تحقق المسؤولية المدنية عن حوادث المركبات، صور التعويض، وتقييم الأحكام الإجرائية للمطالبة بالتغطية.

Vehicle accidents pose a great danger to people's lives and property, which is why, decades ago, the United Arab Emirates turned towards the path followed by the vast majority of Arab and foreign countries, which is the regulation of compulsory insurance on the civil liability of vehicle accidents.

The Board of Directors of the Insurance Authority issued the unified vehicle insurance policy issued under the system of unification of vehicle insurance policies under Resolution No. (25) Of 2016. This document is a legal system, amending Ministerial Resolution No. (54) of 1987 regarding the unification of car insurance policies, where this decision referred to the covered risks and general exceptions that are not covered by insurance from civil liability that does not result from them or arise from accidents that occur from the insured vehicle.

Many negatives appeared with this amendment, which put pressure on the Insurance Authority to make two amendments to the provisions of the unified document: the first was within less than a year since its implementation, and the second was in 2018. Therefore, it was necessary to know the impact of the provisions of the unified insurance policy on the rights of both parties to the insurance policy, and the problems that are among the obstacles to applying the policy as it should, which negatively affect the civil liability of the insured. This was evaluating the conditions for verifying civil liability for vehicle accidents, forms of compensation, and evaluating the procedural provisions for claiming coverage.