# BOOK OF ABSTRACTS

## FACULTY RESEARCH PUBLICATIONS

### UNIVERSITY OF SCIENCE AND TECHNOLOGY OF FUJAIRAH

**ACADEMIC YEAR
2021-2022**

**SEPTEMBER 2022**

جامعـة العـــلــوم والتـقنـيــة في الفــجيـرة

**UNIVERSITY OF SCIENCE & TECHNOLOGY OF FUJAIRAH**

# Book of Abstracts

## USTF Faculty Research Publications

### Academic Year 2021-2022

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# I. Introduction

University of Science and Technology of Fujairah (USTF) stresses the importance of research and scholarly activities of faculty, teaching assistants, and students. USTF supports faculty publications in international reputable journals of high impact factors. USTF also encourages faculty participation in conferences on national, regional, and international levels and provides.

As a new proactive university, USTF aligns its research efforts with the UAE Vision 2021 in addressing global problems of national impacts. The importance of research to USTF community is well addressed in Goal 2 of USTF Strategic Plan 2018-2023. In fact, research is one of the main criteria for recruitment and promotion of faculty members.

According to USTF Research Strategy, USTF research initiatives comes in line with the UAE Vision 2021 and focuses on sustainability, artificial intelligence, smart cities, automation, COVID-19 pandemic, and distance learning. USTF encourages faculty and students to concentrate on these themes in their research efforts.

The University requires and encourages its faculty members to conduct high-quality research in their areas of specialization and publish their research results in highly reputable international journals. The publication of scientific research is considered as one of the most essential activities of faculty members at USTF. The University supports its faculty towards achieving this goal. To stress this fact, USTF has adopted a compensation policy to provide a financial compensation for the publication of quality research in SCOPUS-indexed journals and USTF-A peer reviewed journals. The total number of USTF Faculty Scopus-Indexed Publications and Category-A Arabic Journals during the Last Five Years is illustrated at the following table:

*Table 1: USTF Faculty Scopus-Indexed Publications and Category-A Arabic Journals during the Last Five Years.*

| No. | College | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|---|---|
| 1 | Engineering and Technology | 1 | 5 | 7 | 13 | 11 |
| 2 | College of Humanities and Sciences | 2 | 3 | 4 | 3 | 7 |
| 3 | College of Business Administration | 2 | 1 | 4 | 2 | 5 |
| 4 | College of Dentistry | 7 | 8 | 12 | 10 | 5 |
| 5 | Pharmacy and Health Sciences | 5 | 13 | 20 | 15 | 15 |
| 6 | College of Law | 1 | 2 | 2 | 2 | 2 |
| | **Total** | **18** | **32** | **49** | **45** | **45** |

# II. College of Engineering and Technology

## Accurate and efficient forecasted wind energy using selected temporal metrological variables and wind direction

Energy Conversion and Management: X
**Amir J. Majid, Ph.D.**

The aim of this work is to find the most efficient and suitable input features to be selected for forecasting monthly wind energy accurately. Machine learning is employed for a modular pipelined neural network, composed of time-delayed and feedforward networks with features of metrological variables such as atmospheric temperature, humidity, wind direction, and wind speed frequency distribution parameters. Logged data over a year's period at a UAE site are analyzed on daily and monthly bases depending on their variation characteristics, in which standard Weibull probability distribution function is used for the feedforward neural network together with wind direction data, while daily average ambient temperature and humidity are attempted for the composite time delay networks. Different network abstractions of input features are compared, and it is found that wind direction data offer a better wind speed forecast. Wind energy is calculated based on monthly forecasting. A detailed adaptive probabilistic analysis is conducted to predict thresholds in variations of the forecast analysis. Error estimation tools are performed for adopting this method.

## Wind energy forecasting by fitting predicted probability density functions of wind speed measurements

**Amir J. Majid, Ph.D.**

The aim of this work is to forecast wind energy by fitting the wind speed logged data, that have been measured over a year period (Nov. 2019–Mar. 2021), on a unique probability density function selected among a number of similar probability functions, as it is not always possible to select one distribution function that fits all wind speed regimes. The wind speed and direction data were measured at Fujairah site, which are affected by long-term fluctuation of ± 10% of wind speed, and short-term fluctuation of more than ± 20%. Based on the foregoing measurements, five different probability density functions can be fitted, namely Weibull, Rayleigh, Gamma, Lognormal and Exponential, with their associated parameters. A procedural algorithm is proposed for wind speed forecasting with best selected fitting distribution function, using a procedural forecast-check method, in which forecasting is performed with time on the most suitable distribution function that fits the foregoing data, depending on minimum errors accumulated from preceded measurements. Different error estimation methods are applied. The algorithm of selecting different distribution functions with time, makes energy prediction more accurate depending on the fluctuation of wind speed. A detailed probabilistic analysis is carried out to predict probable wind speed, and hence wind energy, based on variations of the parameters of the selected fitting distribution function.

Scopus

# A Novel Pathological Voice Identification Technique through Simulated Cochlear Implant Processing Systems

**Dr. Mohammed Tarique, Dr. Rumana Islam, Dr. Esam Abdel-Raheem**

This paper presents a pathological voice identification system employing signal processing techniques through cochlear implant models. The fundamentals of the biological process for speech perception are investigated to develop this technique. Two cochlear implant models are considered in this work: one uses a conventional bank of bandpass filters, and the other one uses a bank of optimized gammatone filters. The critical center frequencies of those filters are selected to mimic the human cochlear vibration patterns caused by audio signals. The proposed system processes the speech samples and applies a CNN for final pathological voice identification. The results show that the two proposed models adopting bandpass and gammatone filterbanks can discriminate the pathological voices from healthy ones, resulting in F1 scores of 77.6% and 78.7%, respectively, with speech samples. The obtained results of this work are also compared with those of other related published works.

**APA Citation:** Islam, R., Abdel-Raheem, E., & Tarique, M. (2022). A Novel Pathological Voice Identification Technique through Simulated Cochlear Implant Processing Systems. Applied Sciences, 12(5), 2398.

**DOI:** https://doi.org/10.3390/app12052398

# A Novel Convolutional Neural Network-Based Pathological Voice Detection System Using Chromagram and Spectrogram

Biomedical Engineering Advances, Elsevier
**Dr. Mohammed Tarique, Dr. Rumana Islam, Dr. Esam Abdel-Raheem**

This paper presents a convolutional neural network (CNN) based noninvasive pathological voice detection algorithm using signal processing approach. The proposed algorithm extracts an acoustic feature, called chromagram, from voice samples and applies this feature to the input of a CNN for classification. The main advantage of chromagram is that it can mimic the way humans perceive pitch in sounds and hence can be considered useful to detect dysphonic voices, as the pitch in the generated sounds varies depending on the pathological conditions. The simulation results show that classification accuracy of 85% can be achieved with the chromagram. A comparison of the performances for the proposed algorithm with those of other related works is also presented.

**Keywords:** Chromagram; Classification; Deep Learning; Dysphonia; Machine learning; Voice pathology.

Scopus

# A study of using cough sounds and deep neural networks for the early detection of Covid-19

Biomedical Engineering Advances
**Dr. Mohammed Tarique, Dr. Rumana Islam**

The current clinical diagnosis of COVID-19 requires person-to-person contact, needs variable time to produce results, and is expensive. It is even inaccessible to the general population in some developing countries due to insufficient healthcare facilities. Hence, a low-cost, quick, and easily accessible solution for COVID-19 diagnosis is vital. This paper presents a study that involves developing an algorithm for automated and non-invasive diagnosis of COVID-19 using cough sound samples and a deep neural network. The cough sounds provide essential information about the behavior of glottis under different respiratory pathological conditions. Hence, the characteristics of cough sounds can identify respiratory diseases like COVID-19. The proposed algorithm consists of three main steps (a) extraction of acoustic features from the cough sound samples, (b) formation of a feature vector, and (c) classification of the cough sound samples using a deep neural network. The output from the proposed system provides a COVID-19 likelihood diagnosis. In this work, we consider three acoustic feature vectors, namely (a) time-domain, (b) frequency-domain, and (c) mixed-domain (i.e., a combination of features in both time-domain and frequency-domain). The performance of the proposed algorithm is evaluated using cough sound samples collected from healthy and COVID-19 patients. The results show that the proposed algorithm automatically detects COVID-19 cough sound samples with an overall accuracy of 89.2%, 97.5%, and 93.8% using time-domain, frequency-domain, and mixed-domain feature vectors, respectively. The proposed algorithm, coupled with its high accuracy, demonstrates that it can be used for quick identification or early screening of COVID-19. We also compare our results with that of some state-of-the-art works.

Scopus

# Early Detection of COVID-19 Patients using Chromagram Features of Cough Sound Recordings with Machine Learning Algorithms

In 2021 International Conference on Microelectronics (ICM)
**Dr. Mohammed Tarique, Dr. Rumana Islam, Dr. Esam Abdel-Raheem**

This paper presents a cough sound-based fast, automated, and noninvasive COVID-19 detection system to discriminate the cough sounds of the COVID-19 patients from the healthy individuals. The proposed system extracts an acoustic feature called chromagram from the cough sound samples and applies it to the input of a classifier algorithm. Two artificial neural network (ANN) based classifiers namely convolutional neural network (CNN) and deep neural network (DNN) are modeled for this purpose. The simulation results show that the proposed system achieves an accuracy of 92.9% and 91.7% with CNN and DNN respectively. The performance comparison of the proposed system with two popular machine learning algorithms namely support vector machine (SVM) and k-nearest neighbor (kNN) are also presented in this work.

**APA Citation**: Islam, R., Abdel-Raheem, E., & Tarique, M. (2021, December). Early Detection of COVID-19 Patients using Chromagram Features of Cough Sound Recordings with Machine Learning Algorithms. In 2021 International Conference on Microelectronics (ICM) (pp. 82-85). IEEE.

https://ieeexplore.ieee.org/document/9664931



Scopus

# Discriminating COVID-19 from Pneumonia using Machine Learning Algorithms and Chest X-ray Images

In 2022 International Conference on Industrial Technology (ICIT)
**Dr. Mohammed Tarique, Dr. Rumana Islam, Dr. Esam Abdel-Raheem**

Reverse Transcription Polymerase Chain Reaction (RT-PCR) test is commonly used to detect COVID-19. However, the RT-PCR test necessitates person-to-person contact to administer and is expensive. Not only that, the diagnostic tests are still unreachable to the majority of the global population. The chest X-ray images are helpful for this purpose as the X-ray machines are available in almost all healthcare facilities. However, the chest X-ray images of COVID-19 and pneumonia patients are very similar and often lead to misdiagnosis. This paper presents automated noninvasive algorithms that can identify the X-ray images of COVID patients from that of pneumonia patients. This investigation has employed two algorithms based on machine learning and deep learning approaches. The lower dimension encoded features are extracted from the X-ray images and machine learning algorithms are applied. On the other hand, the deep learning algorithm relies on the inbuilt feature extractor networks to classify the original X-ray images. The simulation results show that the proposed algorithms can discriminate COVID patients from pneumonia patients with the best accuracies of 100% and 98.1% based on pre-trained deep learning and machine learning algorithms, respectively.

**APA Citation**: Islam, R., Abdel-Raheem, E., & Tarique, M. (2022, August). Discriminating COVID-19 from Pneumonia using Machine Learning Algorithms and Chest X-ray Images. In 2022 International Conference on Industrial Technology (ICIT). IEEE.

Scopus

# An Efficient Photovoltaic Modeling Using an Adaptive Fractional-order Archimedes Optimization Algorithm: Validation with Partial Shading Conditions

Solar Energy
**Dalia Yousri, Dr. Yomna Shaker, Seyedali Mirjalili, Dalia Allam**

Detecting the maximum power point in the photovoltaic (PV) system under normal and shaded weather conditions with high accuracy is vital to save the harvested power. Providing a robust model that emulates the physical behavior of a combination of particular solar modules is the core of designing a reliable PV system. As the PV models' parameters are not provided in the manufacturing datasheets, there is a persistent need to introduce an efficient and competent tool that provides the optimal parameters of the PV models. Therefore, this paper presents a novel strategy depending on a novel fractional calculus-based optimization technique to detect the optimal parameters of the PV models. The identified parameters globally fulfilled all tested shading conditions of different types and configurations of PV modules, strings, and arrays to verify the optimizer reliability and efficiency. A novel optimization algorithm called an Adaptive Fractional-order Archimedes Optimization Algorithm (A-FAOA) is proposed to identify the single and double diode model parameters for several PV solar cells/modules under various environmental conditions. The proposed algorithm uses a fractional-calculus memory perspective to enhance the exploration stage of the basic Archimedes Optimization Algorithm. In addition, the two-dimensional-Henon map is adopted in the algorithm to tune its parameters adaptively in an attempt to achieve a smooth transition between the exploration and exploitation phases. The developed technique is tested on several experimental datasets for several PV cells/modules under diverse environmental conditions. The proposed algorithm is compared with the recent literature based on statistical analysis and non-parametric tests. Moreover, the fitting curves and the values of error at the maximum power points are provided to demonstrate the superiority of the proposed method. For further evaluation of the reliability of the identified parameters, several PV systems based on the studied modules are implemented under uniform and partial shading conditions to affirm the accuracy of the identified parameters in representing a complete connected system under several environmental phenomena. The considered PV systems include three different strings (3x1, 6x1, 9x1) and three different arrays (3 2, 6 3, 9 9). High accuracy, robust performance, and minor deviation between the experimental and estimated curves are evident in the results.

Scopus

# Optimal Charging/Discharging decision of Energy Storage Community in Grid-connected Microgrid Using Multi-Objective Hunger Game Search Optimizer

**Dr. Yomna Shaker, Dalia Yousri, Ahmed Osama, Ahmed Al., Elsayed Tag-Eldin, Dalia Allam**

A hybrid microgrid system (HMG) is a new avenue that offers an optimal, reliable, and cost-effective solution for utilizing localized renewable energy resources over individual DC or AC microgrids. Nonetheless, the performance of the HMG varies greatly depending on the availability of renewable resources, desired services to provide, and demand system parameters. These parameters have a high impact on decision-making, reduced costs, and improved system reliability. Therefore, in this work, a reliable and robust developed multi-objective optimizer based on the hunger game search optimizer (HGSO) is proposed to attain HMG scheduling energy management schemes over a long-time horizon of 96 hours under uncertain real-time prices. The proposed strategy's main targets are retaining uninterruptible power to the load with minimal operating costs and minimal emission from the storage systems with achieving a high renewable factor. Moreover, a case study is discussed for including the battery degradation cost in the optimization process. These targets expressed via four objective functions for a HMG include grid-connected with photovoltaic and wind as renewable energy resources, besides battery, fuel cell, and supercapacitor as a storage system. The integrated system has been designed to supply the power demand for different load profiles in Egypt and the United Arab Emirates. The proposed multi-objective hunger game search optimizer (MOHGS) is compared with the recent state-of-the-art optimizers, including multi-objective versions of marine predators' algorithm (MOMPA), slime mould algorithm (MOSMA), golden-eagle optimizer (MOGEO), grasshopper optimization algorithm (MOGOA), multi-verse optimizer (MOMVO), antlion optimizer (MOALO), and grey wolf optimizer (MOGWO) to evaluate the performance of the proposed power management system based MOHGS. The scheduled HMG performance is compared with the baseline system to clarify the essential outcomes for the proposed energy management approach. The obtained results confirm the proposed systems' reliability in reducing the power loss, saving the lifetime of the proposed energy storage elements, and minimizing the emissions by 43 % and 34.1 %. Furthermore, the proposed approach saves money for the customers by 184% and 4427% throughout the two studied locations via selling power for the grid compared to the baseline approach. The proposed approach achieves RF values of 86.5% and 94.2%; meanwhile, the baseline approach offers 79.3% and 93.6% for the studied locations, respectively.

Scopus

# Modified Interactive Algorithm Based on Runge Kutta Optimizer for Photovoltaic Modeling: Justification Under Partial Shading and Varied Temperature Conditions

Dr. Yomna Shaker, DALIA YOUSRI, MOHAMMED MUDHSH, LAITH ABUALIGAH LSAYED TAG-ELDIN, MOHAMED ABD ELAZIZ, DALIA ALLAM

The accuracy of characteristic the PV cell/module/array under several operating conditions of radiation and temperature mainly relies on their equivalent circuits sequentially; it is based on identified parameters of the circuits. Therefore, this paper proposes a modified interactive variant of the recent optimization algorithm of the rung-kutta method (MRUN) to determine the reliable parameters of single and double diode models parameters for different PV cells/modules. The results of the MRUN optimizer are validated via series of statistical analyses compared with five new meta-heuristic algorithms including aquila optimizer (AO), electric fish optimizer (EFO), barnacles mating optimizer (BMO), capuchin search algorithm (CapSA), and red fox optimization algorithm (RFSO) moreover, twenty-five state-of the art techniques from literature. Furthermore, the identified parameters certainty is evaluated in implementing the characteristics of an entire system consists of series (S), and series-parallel (S-P) PV arrays with numerous dimensions. The considered arrays dimensions are three series (3S), six series (6S), and nine series (9S) PV modules. For the investigated arrays, three-dimensional arrays are recognized. The first array comprises 3S-2P PV modules where two parallel strings (2P) have three series modules in each string (3S). The second array consists of six series-three parallel (6S-3P) PV modules, and the third one has nine series-nine parallel (9S-9P) PV modules. The results prove that the proposed algorithm precisely and reliably defines the parameters of different PV models with root mean square error and standard deviation of $7.7301e^{-4} \pm 4.9299e^{-6}$, and $7.4653e^{-4} \pm 7.2905e^{-5}$ for 1D, and 2D models, respectively meanwhile the RUN have $7.7438e^{-4} \pm 3.5798e^{-4}$, and $7.5861e^{-4} \pm 4.1096e^{-4}$, respectively. Furthermore, MRUN provided extremely competing results compared to other well-known PV parameters extraction methods statistically as it has.

Scopus

# Managing the exchange of energy between microgrid elements based on multi-objective enhanced marine predators' algorithm

**Dr. Yomna Shaker, Dalia Yousri a, Ahmed Ousama , Ahmed Fathy**
**Thanikanti Sudhakar Babu , Hegazy rezk f Dalia Allam**

Optimal planning for the energy storage elements' status of charging and discharging, besides managing the buying and selling energy from the grid, is the first step for enhancing energy usage and saving costs for customers. Therefore, in this work, an enhanced multi-objective optimization algorithm of the Marine Predators Algorithm (MOEMPA) is proposed to handle three objective functions for minimizing the operating cost and emission with maximizing the renewable factor for optimal usage of the energy resources. The proposed MOEMPA is applied for managing the sharing energy in an interconnected microgrid with utility grid. The considered microgrid consists of solar and wind renewable energy sources, diesel for emergence loads, and set of batteries for storage extra energy. The described system used for feeding the required power under three different cases for the weather and the grid continuity/discontinuity along 96 h horizon in India, Delhi. The proposed MOEMPA results are compared with recent multi-objective optimization algorithms including, basic variant of multi-objective versions of marine predators algorithm (MOMPA), grasshopper optimization algorithm (MOGOA), slime mould algorithm (MOSMA), grey wolf optimizer (MOGWO), antlion optimizer (MOALO), and multi-verse optimizer (MOMVO) to assess the performance of the proposed scheduled system based MOEMPA. Furthermore, the baseline system is implemented to provide a comprehensive evaluation for the proposed approach based on MOEMPA. The comparisons and analyses reveal the efficacy and excellence of the proposed approach in minimizing the cost and emission with enhancing the profit for the customers via providing the optimal managing between staging, discharging, buying, and selling decisions. The analysis affirms that, the scheduled system based on MOEMPA has the highest cost-saving of 16.0%, 34.5%, and 26.9% compared with the baseline schedule and other peers over the studied scenarios of operation. Moreover, the schedules based on MOEMPA reduced the emissions by 13.37 % and 14.7%. For the renewable factor, the scheduled system based on MOEMPA enhanced its values to 69.3% and 36.6%; meanwhile, the baseline system has 73.4% and 25.9%, hence the proposed approach guarantee feeding the load with high profit.

Scopus

# Artificial LED Skylights in Upgrading the Psychological Impact of Underground Interior Spaces

Design Engineering
**Ola Samaa Sherif, Ph.D.**

Underground Interior Spaces are one of the neglected spaces aesthetically although they have several usages throughout the ages. They are varied between walking tunnels, malls, car parking, and even basement floors in public buildings to add extra minor or major area spaces.

Researchers have to consider the psychological impacts that arise when the public has to use underground facilities for different functions and periods, which sometimes affects people's mental health causing phobias symptoms and other psychological disorders.

One of the most reasons that alienate the public from using such kinds of spaces is the natural light absence that makes these spaces look mysterious, scary, and gloomy. Designers through last years tried to reach several solutions to simulating the sunlight impact inside underground spaces or sometimes adding areas of real skylights to allow the sunlight seeping into the underground spaces with adding greenery life. But unfortunately, these solutions are not available in most cases either for the poor quality of sunlight simulation devices in the first case or for the impossibility of direct openings to sunlight in the second case.

That makes the suggestion of using the new technology of "Artificial LED Skylights" is considered as the best solution for these spaces; this LED technology could be programmed to adjust the light hue, intensity, and brightness to create an artificial dynamic environment, throughout the day, simulating the natural sunlight environment with its psychological and visual effects which line with the human body's mental and psychological needs and his circadian rhythms also.

## FREE-FORM DESIGN VERSUS ORGANIC PRINCIPLES IN INTERIOR DESIGN

The Seybold Report
**Ola Samaa Sherif, Ph.D.**

Although the principles of organic design have been addressed in many pieces of research, especially after the organic theory was adopted by the American architecture pioneer Frank Lloyd Wright (1867-1959), there are many inaccuracies, dialectics, and controversies associated with this trend that calls for deepening in the study and research of the concept of organic design, its origin and development, its principles, and types. Especially that there is a commonly mistaken definition that each free-form design is an organic design, and the organic design must be free-form. It is important to clarify the philosophy of organic spaces in their different forms, including the literal tradition of natural forms, analytical and philosophical forms, ecological and environmental versions, and so on. The study of nature's multiplicity and the organic morphology in its infinity forms and theories of growth has a deep impact on the complete understanding of organic design and the deduction of its types, principles, and its effect on the interior spaces. The way is still paved to extract more advantages of organic and to apply it in line with the diverse local natural environment in its varied atmospheres, raw materials, social and intellectual levels, especially with the amazing technological advancements and the advanced international capabilities in design and implementation. This is with the negation and exclusion of all superficial ideas that were associated with organic design in our thoughts, with the aim of reaching a future vision of interior architecture through the connection with the natural, human, and heritage roots. Therefore, we must not be fascinated by the appearance, just, or the apparent features of a thing, but rather look deeply, and understand the causes and methods of its existence, and the effects resulting from it.

Scopus

# III.   College Dentistry

## Association of Malnutrition with Delayed Speech among Children 2-6 Years Undergoing Speech Therapy at Rehabilitation Center

Journal of Liaquat University of Medical & Health Sciences
**Muzafar Ali, Erum Khan, Muhammad Nasir Khan, Ameerullah Khan**

**OBJECTIVE:** To determine the association of malnutrition with delayed speech children who underwent speech therapy.

**METHODOLOGY**: A descriptive cross-sectional study was conducted enrolling 138 children aged 2 to 6 years, with delayed speech, and of both genders, using non-probability consecutive sampling technique at the speech therapy department of National Institute of Rehabilitation Medicine, Islamabad from October 2019 - March 2020. Children with all congenital abnormalities which can impaired speech, deaf, age more than 06 or below 2 years, and cases whose parents do not provide consent to participate in the study were excluded. Data was collected after seeking consent from the guardian of the respondent through a pre-developed scale to assess nutrition status and delayed speech was assessed by underachievement of verbal, reading, and spelling. The data were analyzed through SPSS 23.0.

**RESULTS**: Most of the respondents were male (72.5%), residents of urban areas (84.1%), and not going to schools (60.9%). 79% were rich and well-nourished (68.1%), in speech level-I (59.4%). No relationship was observed between malnutrition and delayed speech level (p-value=0.30). Age, education status, residential status, and monthly income were found in association with delayed speech (p-value <0.00).

**CONCLUSION:** There was no significant relationship between malnutrition and delayed speech level.

**KEYWORDS:** Nutrition, Malnutrition, speech, delay speech, children, speech therapy.

Scopus

# Quantitative Evaluation of Apically Extruded Debris of Root Canal Dentin Layer with WaveOne, ProTaper Next, ProTaper Gold Rotary File Systems

Coatings

**Muhammad Ali, Muhammad Adeel Ahmed, Azeem Ul Yaqin Syed et al.**

Endodontic flare-up or post-operative pain occurs when debris such as necrotic pulp tissue, dentin chips, irrigants, and microorganisms are extruded from the apical foramen intraoperatively into the periradicular tissue during root canal instrumentation. This study compared the amount of apical debris extrusion of the root canal dentin layer after using reciprocating and rotary file systems (WaveOne, ProTaper Next and ProTaper Gold). Sixty extracted human maxillary central incisors with one canal and closed apex were included in the study. Samples were randomly and equally divided into three groups (n = 20) according to the file systems used for preparation of the root canal. Teeth in the WO group were instrumented by WaveOne, while the PTN group were instrumented by ProTaper Next, and teeth samples in the PTG group were cleaned and shaped by ProTaper Gold. The mean apically extruded debris weight in grams was estimated using the modified Myers and Montgomery experimental model. Analysis of variance (ANOVA) test was used for the comparison of debris weight in three groups. Post hoc LSD test was applied for pairwise comparison of debris weight. The α value of significance was 0.05. The WO group had significantly lower mean debris weight than the PTN and PTG groups (p = 0.001). Post hoc pairwise comparison revealed that there was a statistically significant difference in mean debris weight between the WO group and PTN group (0.0215 vs. 0.0341, p = 0.001); and the WO group and PTG group (0.0215 vs. 0.0324, p = 0.003). Root canal preparations with different file systems were associated with apical extrusion of the debris from the root canal dentin layer. However, the WaveOne system resulted in a comparatively lower amount of apical debris layer extrusion than the ProTaper Next and ProTaper Gold rotary file systems.

Scopus

# Comparative Stress Analysis of Polyetherketoneketone (PEKK) Telescopic Crowns Supported by Different Primary Crown Materials

Applied Sciences

João Paulo Mendes Tribst, Amanda Maria de Oliveira Dal Piva, Azeem Ul Yaqin Syed, Mohammed Alrabiah et al.

The present study aimed to investigate the stress distribution of secondary telescopic crowns made of polyetherketoneketone (PEKK) combined with different primary crown (PC) materials (Zirconia, CoCr, Titanium, and PEKK) using finite element analysis. The geometric model was composed of bone tissue, periodontal ligament, root dentin, cement layer, primary crown, and secondary telescopic crown (SC). A total of four models were evaluated in which the secondary crowns were simulated in PEKK. The models were designed in CAD software and exported to the computer aided engineering software for the statistic structural analysis simulation. The materials were considered isotropic, with linear behavior and elastic properties. The model was fixed in the bone base and the load was applied at the occlusal surface of the crowns with 600 N. The results were required in von-Mises stress for the primary crown, secondary crown, cement layer, and Equivalent Strain to the periodontal ligament and bone tissue. Results show that the material influenced the stress distribution. The higher the PC elastic modulus, the higher the stress magnitude on the SC and cement layer. In the present study, the use of milled high-density polymer for primary crown presented a promising biomechanical behavior as an alternative material for double-crown design.

# Oral healthcare-seeking behavior during COVID-19 lockdown period; A cross-sectional study from Eastern Saudi Arabia

Heliyon

**Azeem Ul Yaqin Syed, Muhammad Adeel Ahmed et al**

**Objective:** To assess oral healthcare-seeking behaviors during the COVID-19 lockdown period in eastern Saudi Arabia.

**Methods:** A cross-sectional questionnaire-based study was conducted from October 2020 to December 2020 at Dental Clinic Complex, College of Dentistry, King Faisal University Al Ahsa, Saudi Arabia. Three hundred and sixty patients who visited the Dental Clinic Complex after relaxation of lockdown and consented to participate were included in this study. Participants were instructed to complete a questionnaire on oral health and dental care during the lockdown period, consisting of five sections.

**Results:** Out of 360 participants, 168 reported requiring dental help during the lockdown period; however, only 27 participants contacted a dentist to emergency advice on phone, and 102 participants visited a dentist. Most participants used toothpaste for sensitive teeth, followed by over-the-counter pain killers, and clove oil. In this regard, 72.8% of females used toothpaste for sensitive teeth. A considerable number of participants needed filling, followed by root canal treatment, denture repair, and dental extraction. Most participants were treated with pain killers, followed by antibiotics, and referral to a hospital. More than 80% of them expressed that regular visits to the dentist are beneficial.

**Conclusion:** A substantial proportion of participants sought oral health care during the lockdown period, mainly for restorative treatment. This was mostly achieved by visiting a dentist, or via telephone consultation to a lesser extent. Analgesics were the most common prescriptions, followed by antibiotics. Dental patients should be encouraged to regularly visit dentists to mitigate the drawbacks that lockdowns may cause in the provision of oral healthcare services.

Scopus

# IV.   College of Pharmacy and Health Sciences

## General Health Benefits and Pharmacological Activities of Triticum aestivum L.

Molecules

**Said Moshawih, Rabi'atul Nur Amalia Abdullah Juperi, Ganesh Sritheran Paneerselvam, Yaser Mohammed Al-Worafi, et al.**

Common wheat (Triticum aestivum), one of the world's most consumed cereal grains, is known for its uses in baking and cooking in addition to its medicinal uses. As this plant's medical benefits are enormous and scattered, this narrative review was aimed at describing the pharmacological activities, phytochemistry, and the nutritional values of Triticum aestivum. It is a good source of dietary fiber, resistant starch, phenolic acids, alkylresorcinols, lignans, and diverse antioxidant compounds such as carotenoids, tocopherols and tocotrienols. These constituents provide Triticum aestivum with a wide range of pharmacological properties, including anticancer, antimicrobial, antidiabetic, hypolipemic, antioxidant, laxative, and moisturizing effects. This review summarized the established benefits of wheat in human health, the mode of action, and different clinical, in vitro and in vivo studies for different varieties and cultivars. This review also gives an insight for future research into the better use of this plant as a functional food. More clinical trials, in vivo and in vitro studies are warranted to broaden the knowledge about the effect of Triticum aestivum on nutrition-related diseases prevention, and physical and mental well-being sustenance

# A Guide to Online Pharmacy Education: Teaching Strategies and Assessment Methods

CRC Press
**Yaser Mohammed Al-Worafi**

This book describes in detail the various teaching strategies and assessment methods used in pharmacy education. Included in the text is both the advantages and disadvantages of each teaching and assessment method, as well as tips for effective implementation of the strategies. The text covers a plethora of teaching styles, from web based and online learning to lecture and team-based learning, and highlights some of the best practices used worldwide. This book aims to be a valuable single resource for pharmacy educators, students, and researchers.

**APA Citation**: Al-Worafi, Y. (2022). A Guide to Online Pharmacy Education: Teaching Strategies and Assessment Methods. CRC Press.

# A qualitative insight into the perceptions and COVID-19 vaccine hesitancy among Pakistani pharmacists

Human Vaccines & Immunotherapeutics
**Muhammad Osama Yaseen, Arifa Saif, Tahir Mehmood Khan, Misha Yaseen, Amal K. Suleiman, Yaser Mohammed Al-Worafi, et. Al.**

A qualitative exploration of pharmacists' perceptions regarding COVID-19 conspiracies and their willingness to get vaccinated. A semi-structured questionnaire guide was developed using ground theory to conduct in-depth interviews. A total of 36 participants gave consent for an audio-recorded interview. Results have shown that most of the respondents believed that SARS-CoV-2 is a natural virus, not man-made, that causes a disease just like other viruses and it is absurd to believe that the vaccine is being used by foreign powers for the implantation of microchips just to control humans. A general opinion thatwhich reflected from the in-depth interview is that the pharmaceutical companies may be hiding some important information on COVID-19 to promote the sale of their product. Some doubts on the reliability and trustworthiness on the COVID-19 vaccine safety and efficacy data were noticed among the respondents. Factors leading to COVID-19 vaccine hesitancy were adverse reaction, cost of COVID-19 vaccine, and limited data on safety and efficacy profile of COVID-19 vaccine. COVID-19 vaccine hesitancy among health professionals is a major hindrance to our current fight against COVID-19 pandemic. Findings of this study are alarming, and the stakeholders must consider this ongoing vaccination campaign as an opportunity to formulate a mechanism to ensure high vaccination rate among general public and healthcare providers in Pakistan.

# Vaccine Knowledge, Awareness and Hesitancy: A Cross Sectional Survey among Parents Residing at Sandakan District, Sabah.

## Vaccines

### James Yau Hon Voo , Qi Ying Lean, Long Chiau Ming , Nur Hafzan Md. Hanafiah, Yaser Mohammed Al-Worafi

**Background:** Incomplete childhood immunization against communicable diseases is a major concern and vaccine hesitancy remains a hurdle to overcome in primary vaccination programs. This study was to examine the parents' vaccine knowledge, awareness and hesitancy in relation to their children's immunization status.

**Methods:** A cross-sectional questionnaire study design was used. The parents who brought their children for immunization visit or follow-up at four public health clinics located in Sandakan district were invited to participate in this survey. Informed consent was obtained before each participant completed a hard copy of self-administered questionnaire in either English or Malay versions.

**Results:** Of 405 parents responded, they generally had good knowledge and awareness of vaccines, only a small percentage (6.8%) of parents were found vaccine hesitant. There were significant differences in vaccine knowledge and awareness in those from different education levels and employment status; similarly, these two factors also significantly affected the vaccine hesitancy among the parents. The parents' knowledge score was found to be moderately associated with their awareness ($r = 0.551$, $p < 0.01$) and inversely correlated to vaccine hesitancy ($r = -0.397$, $p < 0.01$). Most of the children ($n = 376$, 92.8%) in the study were immunized. The children's immunization status was significantly associated with the parents' education level ($p = 0.025$). There was also a significant difference in the total vaccine knowledge scores between the groups of parents with different child immunization status ($p = 0.05$).

**Conclusion:** This study revealed that parents with higher education had a better knowledge of vaccinations, were less vaccine hesitant and were more likely to ensure that their children complete the recommended course of immunization. It is crucial to ensure parents are well-informed about the safety and efficacy of vaccines so that the children are protected from communicable diseases by the child vaccination program.

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# Frequency and Factors Associated with Adverse Events Among Multi-Drug Resistant Tuberculosis Patients in Pakistan: A Retrospective Study

Frontiers in medicine

**Muhammad Atif, Waqar Ahmed, Muhammad Nouman Iqbal, Nafees Ahmad, Wajiha Ahmad, Iram Malik and Yaser Mohammed Al-Worafi**

**Background:** Treatment of multi-drug resistant tuberculosis (MDR-TB) for a prolonged period with comparatively less effective and more toxic second-line anti-TB drugs is associated with greater incidence of adverse events.

**Study aim:** This study aimed to evaluate the frequency and factors associated with occurrence of adverse events among patients with MDR-TB attending the Bahawal Victoria Hospital, Bahawalpur, Pakistan.

**Study design:** This retrospective study included all patients with MDR-TB who were registered and treated at the study site between June 2014 and December 2016 and had their treatment outcomes available at the time of data collection (i.e., November 2018).

**Measures and outcomes:** The Electronic Nominal Record System (ERNS) records, medical charts of patients, and laboratory reports were reviewed to obtain the data. Adverse events were reported as per the standard criteria recommended by the WHO. Multivariate binary logistic regression was used to find the independent factors associated with the occurrence of adverse events.

**Results:** A total of 179 patients with MDR-TB were included in the final analysis. Out of these, 114 (63.7%) patients experienced at least one adverse event during the course of their treatment. Depression was the most common adverse events (33%), followed by nausea and vomiting (27.4%) and arthralgia (27.4%). The factors associated with the occurrence of adverse events included presence of comorbidity (adjusted odds ratio [AOR] 2.951; 95% CI 1.423, 6.118) and being employed (AOR 3.445; 95% CI 1.188, 9.993).

**Conclusion:** Adverse events were prevalent in this cohort, however, resolved with the effective management approaches. Patients with identified factors for occurrence of adverse events need special attention and enhanced clinical management.

Scopus

## Clinical Case Studies on Medication Safety

Elsevier
**Yaser Mohammed Al-Worafi**

Clinical Case Studies on Medication Safety provides real and simulated scenarios about safety issues related to medication, including Adverse Drug Reactions (ADRs), medication errors, and Drug Related Problems (DRPs). The book explains real-life case management, including details about adverse drug reactions, mistakes during drug administration, drug avoidance, and drug-drug interactions with a goal of improving patient care. With over 150 case studies, including cases from alternative medicine and traditional medicine, this book will help medical and health sciences educators, students, healthcare professionals, and other readers apply their knowledge and skills to solve cases for better patient care.

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# A systematic review on chlorine dioxide as a disinfectant

**Umi Haida Nadia Mohamed Jefri, Abdullah Khan, Ya Chee Lim, Yaser Mohammed Al-Worafi, Long Chiau Ming, Anandarajagopal Kalusalingam, et al.**

The COVID-19 pandemic has tremendously increased the production and sales of disinfectants. This study aimed to systematically review and analyze the efficacy and safety of chlorine dioxide as a disinfectant. The literature relating to the use of chlorine dioxide as a disinfectant was systematically reviewed in January 2021 using databases such as PubMed, Science Direct, and Google Scholar. Inclusion criteria were studies that investigated the use of chlorine dioxide to assess the efficacy, safety, and impact of chlorine dioxide as a disinfectant. Out of the 33 included studies, 14 studies focused on the disinfectant efficacy of chlorine dioxide, 8 studies expounded on the safety and toxicity in humans and animals, and 15 studies discussed the impact, such as water treatment disinfection using chlorine dioxide. Chlorine dioxide is a safe and effective disinfectant, even at concentrations as low as 20 to 30 mg/L. Moreover, the efficacy of chlorine dioxide is mostly independent of pH. Chlorine dioxide can be effectively used to disinfect drinking water without much alteration of palatability and can also be used to destroy pathogenic microbes, including viruses, bacteria, and fungi from vegetables and fruits. Our review confirms that chlorine dioxide is effective against the resistant Mycobacterium, H1N1, and other influenza viruses. Studies generally support the use of chlorine dioxide as a disinfectant. The concentration deemed safe for usage still needs to be determined on a case-by-case basis.

# Situational judgment using ethical reasoning in Saudi undergraduate pharmacy students

BMC medical ethics
**Fahad Saleh Alkhuzaee, Majid Ali, Khang Wen Goh, Yaser Mohammed Al-Worafi & Long Chiau Ming**

**Introduction:** There is a paramount need for moral development for pharmacists and pharmacy students to practice the patient-centered profession. We aimed to explore the current situational judgment utilizing ethical reasoning among undergraduate pharmacy students.

**Methods:** A set of ten ethical dilemmas, representing potential real-life situations that the students come across in the university and may face in the future as a pharmacist were developed by a team of students, academic staff, and stakeholders. These ethical dilemmas were validated, checked for accuracy, and piloted. An online questionnaire was created consisting of these ten scenarios as open-ended questions and administered to fourth year and fifth year PharmD students in a public university located at the city of Mecca, Saudi Arabia, asking them how they would react in that situation. Responses of the participants were analyzed using thematic analysis independently by four researchers and inter-rater agreement were achieved through consensus.

**Results:** Out of 205, 186 students completed the questionnaire with a response rate of 90.7%. Analysis and resulted in the generation of 32 codes, which were then categorized into seven overarching themes: student engagement, social and professional responsibility, academic integrity, legal obligation, moral obligation, signposting, and moral engagement and patient safety.

**Conclusions:** Undergraduate pharmacy students experience complex state of mind in connection with ethical reasoning. The participants' situational judgment were driven by cultural norm, authority, and responsibility. Student engagement is also affected by the state of mind and feelings of mutual trust, perceived cultural influence and peer pressure. The students were prone to seek help from university administrators or teachers when faced with situations in which they were helpless.

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# Coriandrum sativum L.: A Review on Ethnopharmacology, Phytochemistry, and Cardiovascular Benefits

Molecules

**Nisa Najibah Mahleyuddin, Said Moshawih, Yaser Mohammed Al-Worafi, Bey Hing Goh, et al.**

Coriandrum sativum (C. sativum), belonging to the Apiaceae (Umbelliferae) family, is widely recognized for its uses in culinary and traditional medicine. C. sativum contains various phytochemicals such as polyphenols, vitamins, and many phytosterols, which account for its properties including anticancer, anti-inflammatory, antidiabetic, and analgesic effects. The cardiovascular benefits of C. sativum have not been summarized before, hence this review aims to further evaluate and discuss its effectiveness in cardiovascular diseases, according to the recent literature. An electronic search for literature was carried out using the following databases: PubMed, Scopus, Google Scholar, preprint platforms, and the Cochrane Database of Systematic Reviews. Articles were gathered from the inception of the database until August 2021. Moreover, the traditional uses and phytochemistry of coriander were surveyed in the original resources and summarized. As a result, most of the studies that cover cardiovascular benefits and fulfilled the eligibility criteria were in vivo, while only a few were in vitro and clinical studies. In conclusion, C. sativum can be deemed a functional food due to its wide range of cardiovascular benefits such as antihypertensive, anti-atherogenic, antiarrhythmic, hypolipidemic as well as cardioprotective effects. View Full-Text

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# Comparative effectiveness of individualized longer and standardized shorter regimens in the treatment of multidrug resistant tuberculosis in a high burden country

**Yaser Mohammed Al-Worafi, et al.**

**Objective:** To compare the effectiveness of second line injectables containing shorter (duration 9–12 months) and longer treatment regimens (LTR, duration ≥ 20 months) among multidrug-resistant tuberculosis (MDR-TB) patients with no documented resistance and history of treatment with any second-line anti-TB drug (SLD) for ≥ 1 month.

**Methods:** This was an observational cohort study of MDR-TB patients treated at eight PMDT units in Pakistan. Patients' data from baseline until treatment outcomes were collected from Electronic Nominal Recording and Reporting System. The treatment outcomes of "cured" and "treatment completed" were grouped together as successful, whereas "death," "treatment failure," and "lost to follow-up" were collectively grouped as unsuccessful outcomes. Time to sputum culture conversion (SCC) was analyzed using the Kaplan–Meier method and the differences between groups were compared through the log-rank test. Multivariate Cox proportional hazards and binary logistic regression analyses were used to find predictors of time to SCC and unsuccessful treatment outcomes. A p-value < 0.05 was considered statistically significant.

**Results:** A total 701 eligible MDR-TB patients [313 treated with shorter treatment regimen (STR) and 388 treated with LTR at eight centres in Pakistan were evaluated]. Time to achieve SCC was significantly shorter in STR group [mean: 2.03 months, 95% confidence interval (CI):1.79-2.26] than in LTR group (mean: 2.69 months, 95% CI: 2.35-3.03) (p-value<0.001, Log-rank test). Treatment success was higher in STR (83.7%) than in LTR (73.2%) group (p-value <0.001) due to high cure (79.9% vs. 70.9%, p-value = 0.006) and low death (9.9% vs. 18.3%, p-value = 0.002) rates with STR. Treatment with STR emerged the only predictor of early SCC [adjusted Hazards ratio (aHR) = 0.815, p-value = 0.014], whereas, patient's age of 41-60 (OR = 2.62, p-value<0.001) and >60 years (OR = 5.84, p-value<0.001), baseline body weight of 31-60 (OR = 0.36, p-value = 0.001) and >60 kg (OR = 0.23, p-value <0.001), and treatment with LTR (OR = 1.88, p-value = 0.001) had statistically significant association with unsuccessful treatment outcomes.

**Conclusion:** STR exhibited superior anti-microbial activity against MDR-TB. When compared LTR, treatment with STR resulted in significantly early SCC, high cure, and lower death rates among MDR-TB patients who had no documented resistance and history of treatment with any SLD ≥ 1 month.

## Herb and Spices in Colorectal Cancer Prevention and Treatment: A Narrative Review

**Md. Sanower Hossain, Md. Abdul Kader, Yaser Mohammed Al-Worafi, et al.**

Colorectal cancer (CRC) is the second most deadly cancer worldwide. CRC management is challenging due to late detection, high recurrence rate, and multi-drug resistance. Herbs and spices used in cooking, practised for generations, have been shown to contain CRC protective effect or even be useful as an anti-CRC adjuvant therapy when used in high doses. Herbs and spices contain many bioactive compounds and possess many beneficial health effects. The chemopreventive properties of these herbs and spices are mainly mediated by the BCL-2, K-ras, and MMP pathways, caspase activation, the extrinsic apoptotic pathway, and the regulation of ER-stress-induced apoptosis. As a safer natural alternative, these herbs and spices could be good candidates for chemopreventive or chemotherapeutic agents for CRC management because of their antiproliferative action on colorectal carcinoma cells and inhibitory activity on angiogenesis. Therefore, in this narrative review, six different spices and herbs: ginger (Zingiber officinale Roscoe), turmeric (Curcuma longa L.), garlic (Allium sativum L.), fenugreek (Trigonella foenum-graecum L.), sesame (Sesamum indicum L.), and flaxseed (Linum usitatissimum L.) used in daily cuisine were selected for this study and analyzed for their chemoprotective or chemotherapeutic roles in CRC management with underlying molecular mechanisms of actions. Initially, this study comprehensively discussed the molecular basis of CRC development, followed by culinary and traditional uses, current scientific research, and publications of selected herbs and spices on cancers. Lead compounds have been discussed comprehensively for each herb and spice, including anti-CRC phytoconstituents, antioxidant activities, anti-inflammatory properties, and finally, anti-CRC effects with treatment mechanisms. Future possible works have been suggested where applicable.

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# Current views of community and hospital pharmacists on pharmaceutical care services in the United Arab Emirates: A mixed methodological study

F1000Research

**Zelal Kharaba, Joviana Farhat, Bassam S. Mahboub, Manal Ali Buabeid, Yassen Alfoteih, Yaser Al-Worafi, et al.**

**Background:** The profession of pharmacy has evolved significantly in recent years in terms of professional service delivery. The aim of this study was to explore the current views of pharmacists in the United Arab Emirates (UAE) on pharmaceutical care services and the nature of barriers encountered in practice using qualitative and quantitative assessment methods.

**Methods:** A cross-sectional study was conducted among hospital and community pharmacists (n = 305) between March and May 2021, using qualitative and quantitative assessment methods. In the qualitative phase, 15 interviews were conducted to explore five main criteria: patient information, inadequate patient counseling, prescribing errors prevention and identifying drug-related problems, lack of participation in health awareness programs, and barriers to pharmaceutical care implementation. In the quantitative phase, 305 consenting pharmacists completed a questionnaire on seven criteria: demographic profile, pharmacist-physician interaction, patient counseling assessment, patient reports of adverse drug events, pharmacist participation in health awareness programs, perceptions of reducing prescribing errors and identifying drug-related problems, and barriers to appropriate pharmaceutical care implementation.

**Results:** The results of both the qualitative and quantitative phases of the study revealed that pharmacists' influence on practice in the UAE is limited due to many factors, mainly lack of time and patients' ignorance of the pharmacist's role in the medical field. The mean responses regarding pharmacists' approach to patient counseling and patients' knowledge of pharmacists' role in managing adverse drug reactions were 77.1% and 59.7%, respectively. Active participation in health awareness programs was 64.8%. The mean positive response of participants in reducing prescribing errors and recognizing drug-related problems was 9.2%. Pharmacists' age and number of years in practice were the most important factors influencing the pharmaceutical care services implementation. **Conclusion:** The study has shown the need to shed light on the proper implementation of pharmaceutical care while maintaining a trusting relationship with physicians.

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# Economic Analysis of Patient's Own Medication, Unit-Use and Ward Stock Utilization: Results of the First Pilot Study

**Hamimatul Hayat Abdul Nasir, Hui Poh Goh, Daniel Vui TeckWee, Andi Hermansyah, Yaser Mohammed Al-Worafi et al.**

**Background:** Medication wastage is causing a cost burden to the healthcare system that is worth millions of dollars. An economic and ecological friendly intervention such as using a patient's own medications (POM) has proven to reduce wastage and save the cost spent by the hospital. The potential benefits of using POM in inpatient settings have yet to be explored in a country with universal health coverage. This study aimed to pilot test the POM intervention in an adult ward setting and to perform the economic analysis of using POM and ward stock during hospitalization.

**Methods:** A prospective cross-sectional observational study was conducted among the patients admitted to the medical and surgical wards in a public hospital located in Brunei Darussalam between February 2022 and April 2022. Hospitalized adults above 18 years old with regular medications with a minimum length of stay of 48 h and a maximum length of stay of 21 days were included in the study. These eligible patients were divided into a POM group and a non-POM group. The economic analysis of using POM was performed by calculating the direct cost per unit of medication used during admission (from unit-use, ward stock and POM) and comparing the cost spent for both groups. Expired ward stock deemed as medication wastage was determined. Medical research ethics were approved, and all participating patients had given their written informed consent before enrolling in this study.

**Results:** A total of 112 patients aged 63.2 ± 15.8 years participated in this study. The average cost of medication supplied by the inpatient pharmacy for the non-POM group was USD 21.60 ± 34.20 per patient, whereas, for the POM group, it was approximately USD 13.00 ± 18.30 per patient, with a mean difference of USD 8.60 ± 5.17 per patient (95% CI: −3.95, 27.47, $p \geq 0.05$). The use of POM minimized 54.03% (USD 625.04) of the total cost spent by the hospital for the POM group within the period of the study.

**Conclusion:** The pilot study showed that the supplied medication cost per patient was not significantly different between the POM and non-POM groups. Nevertheless, the utilization of POM during hospitalization is capable of reducing at least 50% of the total cost spent on inpatient medications by the hospital. The use of POM during hospitalization also helped in reducing the total time spent on the medication process per patient.

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

**Khadija Rehman, Imdad Alia, Babiker M.El-Haj, et 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.

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# Enhanced anticancer activities of curcumin-loaded green gum acacia-based silver nanoparticles against melanoma and breast cancer cells

Applied Nanoscience

**Imran Ali, Samrein B. M. Ahmed, Babiker M. Elhaj, Heyam Saad Ali, Abdullah Alsubaie & Abdulraheem S. A. Almalki**

Nano-anticancer drugs are gaining importance in cancer treatment due to their unique properties and wide range of applications. The efforts are made to synthesize silver nanoparticles by a green method and used as nano-carriers for curcumin. Green synthesis of the gum-stabilized AgNPs was monitored by UV–Vis spectrophotometry and the possible interactions of gum with AgNPs were evaluated by FT-IR. The curcumin-loaded AgNPs were characterized for their size, polydispersity index, $\zeta$ potential, morphology, size distribution, drug loading efficiency, and excipients' interactions. The prepared nano-anticancer formulations were characterized and tested for anti-cancer potentials against MM-138, FM-55 and MCF-7 cell lines, respectively. The AgNPs acted as excellent nano-carriers for an increased amount of curcumin. In in vitro anticancer study, the IC50 values for AgNPs, curcumin, and curcumin-loaded AgNPs were 166.3, 82.2 and 61.6 µg/mL; 153.2, 107.3 and 77.1 µg/mL; and 144.6, 81.2 and 60.6 µg/mL against MM-138, FM-55 and MCF-7 cell lines, respectively. It was observed that silver nanoparticles showed good loading capacity for curcumin. Also, the curcumin-loaded nanoparticles showed good anticancer activities against MM-138, FM-55 and MCF-7 cell lines, respectively. The reported nano-anticancer drug formulations may be tested in vivo studies and clinical trials for treating cancer in the future.

Scopus

# V. College of Business Administration

## Synergistic effects of Culture and Good Governance on Innovation: A European Union Comprehensive Correlational Approach.

Journal Global Policy and Governance
**Dr. Alberto Ibanez, Gyanendra Singh Sisodia, Juan Antonio Jimber del Río, Asok Mathew, Ahmed Al Radaideh**

Studies on culture and innovation might view their interactions as separate entities, overlooking the potential relations among the cultural dimensions themselves, and their potential synergies and interactions with innovation. Additionally, governance indicators might be treated as independent entities, lacking further country background. Cultural dimensions interact with country governance contexts, which might exert a direct effect between the components of country good governance indicators and cultural dimensions, on innovation. The present research develops a comprehensive framework by examining the potential synergies among the cultural dimensions and their effect on innovation, as well as the potential synergies among the good governance indicators to foster innovation and the combined effect of cultural dimensions and good governance indicators on innovation. The study builds upon and goes beyond the existing research on the relationship between cultural profiles and country innovation performance while understanding the governance context in which these cultural dimensions are embedded.

https://ideas.repec.org/a/ase/jgpgta/v11y2022i1p79-95id462.html


Scopus

# Managing university e-learning environments and academic achievement in the United Arab Emirates: GeoJournal

PLOS ONE

**Dr. Alberto Ibanez, Gyanendra Singh Sisodia, Asok Mathew, Juan Antonio Jimber**

The present research evaluates how E-learning environment, E-learning adoption, Digital readiness, and Students attitudes towards E-learning, affect Academic achievement. The study focuses on a much-neglected cultural context, Gulf Cooperation Council countries (GCC), since Student's readiness as well as institutions and professors' endowments greatly varied within countries and among universities. The study further incorporates Instructors attitudes and evaluates the mediation effect of Academic engagement on Academic achievement. The methodology relies on Partial Least Squares structural equation modelling (PLS-SEM). The research findings emphasize the role of E-learning environment, Digital readiness, Academic engagement, students as well as instructors E-learning attitude as the decisive factors that determine students' Academic achievement. This implies that institutions who adapt to a changing environment by aligning students and instructors' goals to develop a positive and supportive E-learning environment, will foment Academic engagement and promote students' Academic achievement.

Scopus

# Exploring the role of Human Resource Development functions on Crisis management: the case of Dubai-UAE during Covid-19 crisis

**Dr. Alberto Ibanez, Amir Hamad Salim Binnashira Alketbi, Juan Antonio Jimber**

Employee welfare represents a critical element of success for companies to remain competitive. Human resources increasingly encompass the management of critical situations that affect the employees' wellbeing. This research analyzes the effect of Human Resource Development (HRD), functions on the effectiveness of crisis management. It is an attempt to include HRD in the theory of Crisis management. Using Structural Equation Models-Partial Least Squares (SEM-PLS) analysis, the study analyzes how training, leadership, organizational strategy, and organizational culture directly positively impact the efficiency of Crisis management (CM) during the Covid-19 crisis in the public entities of Dubai-UAE. In particular, training showed to be the best predictor, followed by the Organizational culture. Organizational structure, Values and uniqueness show no impact on CM within the context of public entities of Dubai-UAE.

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# The cultural and heritage tourist, SEM analysis: the case of The Citadel of the Catholic King

Heritage Science

**Ricardo David Hernández-Rojas, Juan Antonio Jimber del Río, Dr. Alberto Ibáñez Fernández & Arnaldo Vergara-Romero**

This study researches the loyalty of travelers to destinations which include material cultural heritage. It analyzes the loyalty of visitors to a destination with cultural heritage sites in order to provide results which can be used to improve the management of the destination. This research used Warp-PLS 7.0 software with a structural equations model to evaluate the 8 proposed and validated hypotheses. A questionnaire was given to a sample of 499 tourists who visited The Citadel of the Catholic King in Córdoba and the statistical study of the replies gave results about the loyalty of visitors to a destination which includes cultural heritage. This study adds an innovative component by analyzing the moderating effect of perceived heritage quality and perceived cultural quality on the relationship of perceived value and visitor satisfaction. This study shows that visitor loyalty to The Citadel of the Catholic King depends on the visitor satisfaction with the cultural heritage, it also analyses how the quality perceived by the tourist modulates to varying degrees the relationship between perceived value and tourist satisfaction. Areas which can be improved at cultural heritage sites have been identified and these include the professionalization of tour guides specialized in cultural heritage sites, improving and showing the cultural importance of the heritage, the information available about the heritage and the access to the heritage. These findings are important for city managers when preparing projects to increase the loyalty and competitiveness of the city compared to other similar destinations with cultural heritage.

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# Emotional Intelligence and Personal Finances in the Academic Curricula: A Critical Analysis of Their Potential Synergies

Asian Culture and History
**Synthia Imam, Alberto Ibañez Fernandez, Gyanendra Singh Sisodia, Juan Antonio Jimber del Río & Ahmed Al Radaideh**

The research addresses two major topics, Emotional Intelligence and Personal Finance, and the need to be permanently included in the academic curricula. The purpose of the paper consists in raising awareness within the teaching community on the relevance of these two topics for the personal and professional development of students. Furthermore, the research identifies the potential positive synergies between emotional intelligence and personal finances for students when both subjects are included in the academic curricula. The study proposes several conceptual findings via the literature review and showcases how emotional intelligence could have a higher positive effect than Intelligent Quotient when managing personal finances, and how individuals with a higher Emotional Intelligence become more effective in their professional development and more financially independent. The paper also signifies the importance of money attitude and self-efficacy in individual's financial management behavior and identifies the positive synergies between Emotional Intelligence and personal finance management on students" academic and professional development.

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## Collaborative Innovation and Organizational Transformation in the Education Sector during the Pandemic of COVID-19

Journal of Positive School Psychology
**Dr. Alberto Ibañez Fernandez, Mariam Rabee Al-Naqbi, Gyanendra Singh Sisodia, Umesh Ramchandra Raut**

For decades, the innovation concept has been under study; like so many sectors, disciplines and businesses, we are trying to understand and adopt innovation in our daily work operation. Furthermore, a plethora of research conducted in order to understand innovation profoundly. This study is attentive to understanding and analyzing factors that impact collaborative innovation in education, which may have influenced the education sector in the UAE during the pandemic time. Using five independent variables, which are human resource practices (HRP), employee engagement (EE), employee adaptability (EA), training and development (T&D), technology knowledge (TK), and intermediate variable innovation at education (IAE), and one dependent variable transformation and performance (T&P). The study followed a random sample from multiple education establishments in the UAE surveying teachers. The findings of the study revealed significant relationships among all dependent variables (DV) and intermediate variable (MV), as well as between intermediate variable (MV) and dependent variable (DV), which indicates that when (IV) is utilised and attained, innovation in education will be accomplished, and as a result, robust performance and transformation process could be in place.

# VI.    College of Humanities and Sciences

## 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.

## Happiness among UAE undergraduates: One year since COVID 19

**Safwat Mohammad Saleh Al-Tal, Ahmed Ali Mesleh Alradaideh**

This paper comes to explore the level of happiness among a sample of university students in UAE by running the Oxford Happiness survey. In relation to happiness, the study continues to address the relationship between happiness and three variables: the academic achievement / performance represented by Grade Point Average GPA, the Gender and the Academic Progress (the year at which the student is in).

The main results suggest that there is an association between happiness and academic achievement of students, however, females tend to be happier than males. In addition, it was found that as students' progress in their studies in the university their happiness level decreases.

When numbers were compared with the previous study, it was found that the current study showed lower happiness levels, this is interpreted as a result of the COVID19 consequences especially that the study was done after a year since the start of the pandemic.

Scopus

# Comparison of Surface Equivalent Dose in CBCT, Digital Panoramic and Intra-Oral X-Ray Generators Using Instadose

The Open Dentistry Journal

**Asok Mathew, Salam Almahi, Razan Mohamed, Salem Abu Fanas, Mohamed A. Jaber, Alexander M. Luke, Ahmed Radeideh, Shishir Shetty**

**Background:** Radiation protection in the dental examination is often overlooked because the doses delivered are negligible. However, the volume of dental radiological examinations will constitute almost 15% of all the radiological examinations carried out in the medical field.

**Aim:** This study aims to evaluate and compare the surface equivalent dose on various target organs from various radiology devices on the RINN phantom, and the effect of numerous scanning protocols on said dose using dosimetry badge (Instadose).

**Objectives:** The main objective is to study surface equivalent doses delivered in various critical organ regions in the facial region with the help of an Instadose device and to compare the doses delivered between 2D programs against 3D programs.

**Materials and Methods:** RINN phantom was mounted on a dental chair for use against Planmeca ProMax 3D Classic and Planmeca intraoral ProX. Models. An Instadose badge was placed on various anatomical landmarks, and radiographic exposure protocols were applied to vary the parameters. The equivalent dose was calculated by connecting the dosimeter to a laptop and performing an instant reading output on the Instadose software.

**Results:** The Thyroid showed a mean of 0.350, 0.0000, 0.0133, and 0.0000 in response to exposure by intraoral machine ProX, Panoramic, CBCT, and CBCT in ULD mode respectively. The dose absorbed by the left salivary glands was found to be significantly lower than the right salivary glands in panoramic exposures.

**Conclusion:** It was revealed that a significant reduction in the dose when applying the Ultra-Low Dose protocol was noticed, and it reached up to 100% in the thyroid. It was also noted that there is no need for a thyroid collar in CBCT and Panoramic exposures. Maintaining the KVp at a constant and the exposure time as a variant caused a change in the dose equivalent received by the floor of the mouth and the right salivary gland.

**Keywords:** Dosimetry, Cone-beam computed tomography, Panoramic radiography, Intra-oral radiography, Equivalent dose, Radiation dose, Instadose, Ultra-low dose.

Scopus

# Emotional Intelligence and Personal Finances in the Academic Curricula: A Critical Analysis of Their Potential Synergies

Asian Culture and History

**Synthia Imam, Alberto Ibañez Fernandez, Gyanendra Singh Sisodia, Juan Antonio Jimber del Río & Ahmed Al Radaideh**

The research addresses two major topics, Emotional Intelligence and Personal Finance, and the need to be permanently included in the academic curricula. The purpose of the paper consists in raising awareness within the teaching community on the relevance of these two topics for the personal and professional development of students. Furthermore, the research identifies the potential positive synergies between emotional intelligence and personal finances for students when both subjects are included in the academic curricula. The study proposes several conceptual findings via the literature review and showcases how emotional intelligence could have a higher positive effect than Intelligent Quotient when managing personal finances, and how individuals with a higher Emotional Intelligence become more effective in their professional development and more financially independent. The paper also signifies the importance of money attitude and self-efficacy in individual's financial management behavior and identifies the positive synergies between Emotional Intelligence and personal finance management on students" academic and professional development.

**APA Citation**: Imam, S., Fernandez, A. I., Sisodia, G. S., del Río, J. A. J., & Al Radaideh, A. (2022). Emotional Intelligence and Personal Finances in the Academic Curricula: A Critical Analysis of Their Potential Synergies. Asian Culture and History, 14(1), 1-6.

## Synergistic effects of Culture and Good Governance on Innovation: A European Union Comprehensive Correlational Approach.

Journal Global Policy and Governance
**Dr. Alberto Ibanez, Gyanendra Singh Sisodia, Juan Antonio Jimber del Río, Asok Mathew, Ahmed Al Radaideh**

Studies on culture and innovation might view their interactions as separate entities, overlooking the potential relations among the cultural dimensions themselves, and their potential synergies and interactions with innovation. Additionally, governance indicators might be treated as independent entities, lacking further country background. Cultural dimensions interact with country governance contexts, which might exert a direct effect between the components of country good governance indicators and cultural dimensions, on innovation. The present research develops a comprehensive framework by examining the potential synergies among the cultural dimensions and their effect on innovation, as well as the potential synergies among the good governance indicators to foster innovation and the combined effect of cultural dimensions and good governance indicators on innovation. The study builds upon and goes beyond the existing research on the relationship between cultural profiles and country innovation performance while understanding the governance context in which these cultural dimensions are embedded.

Scopus

# Managing university e-learning environments and academic achievement in the United Arab Emirates: GeoJournal

PLOS ONE

**Dr. Alberto Ibanez, Gyanendra Singh Sisodia, Asok Mathew, Juan Antonio Jimber**

The present research evaluates how E-learning environment, E-learning adoption, Digital readiness, and Students attitudes towards E-learning, affect Academic achievement. The study focuses on a much-neglected cultural context, Gulf Cooperation Council countries (GCC), since Student's readiness as well as institutions and professors' endowments greatly varied within countries and among universities. The study further incorporates Instructors attitudes and evaluates the mediation effect of Academic engagement on Academic achievement. The methodology relies on Partial Least Squares structural equation modelling (PLS-SEM). The research findings emphasize the role of E-learning environment, Digital readiness, Academic engagement, students as well as instructors E-learning attitude as the decisive factors that determine students' Academic achievement. This implies that institutions who adapt to a changing environment by aligning students and instructors' goals to develop a positive and supportive E-learning environment, will foment Academic engagement and promote students' Academic achievement.

Scopus

## Culture and sexual differences in impulsivity among university students

Faculty of Arts Journal, Helwan University
**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. Keywords: Impulsivity, Cross-cultural, Sexual differences, Egypt, Saudi Arabia, Students.

**Keywords:** Impulsivity, Cross-cultural, Sexual differences, Egypt, Saudi Arabia, Students.

**APA Citation**: Khalid Ziada, Salaheldin Bakhiet, Ahmed Al-Shafey (2022). Culture and sexual differences in impulsivity among university students. Faculty of Arts Journal, Helwan University. 11(1), 265-293.

https://jfafu.journals.ekb.eg/article_168036

## الألعاب الالكترونية وتأثيراتها على الأطفال في ظل انتشار جائحة كوفيد-19

د. أسماء أحمد

مع ظهور جائحة كوفيد 19 وبدء إجراءات الإغلاق والحجر المنزلي ظهرت العديد من المتغيرات المرتبطة بالتأقلم والتعايش مع هذا الوضع الجديد غير المألوف سابقا، وفي خضم ذلك كله وجدت الأسرة نفسها أمام تحدي كبير مع أبنائها خاصة وأنهم كانوا بمثابة الطرف الأكثر تضررا من هذا الحجر، فنجد أنه مع إلزام الأبناء بعدم الخروج ومغادرة البيت، خوفا على صحتهم من انتقال العدوى عبر هذا الفيروس الخطير، ومع وجود وقت فراغ كبير لديهم أصبح الملاذ الوحيد لهم هو اللجوء إلى استخدام الإنترنت والألعاب الإلكترونية، ذلك النشاط الذي وإن كان قد غطى جزء كبير من فراغ الأبناء إلا أنه وضعهم داخل حيز من الإدمان ومختلف التأثيرات المترتبة عليه، وقد استهدف البحث الحالي محاولة وصف واقع تأثير الألعاب الإلكترونية على الأطفال في ظل جائحة كوفيد 19، وهو ينتمي إلى الدراسات الوصفية التي تستهدف وصف وتحليل الواقع باستخدام المسح الاجتماعي بالعينة العمدية، والذي تم من خلال تطبيق استبيان على عينة من الطلاب عددها (132) طالب بالصف الأول بالمرحلة المتوسطة، لتحديد واقع استخدام الأطفال للألعاب الإلكترونية، والتعرف على تأثيراتها الإيجابية والسلبية عليهم، ومن ثم التوصل إلى بعض الإجراءات الوقائية لحماية الأطفال من السلبيات في ظل جائحة كوفيد 19.

With the emergence of the Covid 19 pandemic and the start of closure and home quarantine procedures, many variables related to adapting and coexisting with this new previously unfamiliar situation, and in the midst of all that the family found itself facing a great challenge with Their children, especially since they were the party most affected by this stone, we find that with Obligating children not to go out and leave the house, fearing for their health from the transmission of infection through this dangerous virus, and with their large free time, the only recourse for them is to resort to the use of the Internet and electronic games, an activity that, although it covered a large part of the children's emptiness, but it Putting them within a space of addiction and its various effects. The current research aimed at trying to describe the reality of the impact of electronic games on children in light of the Covid 19 pandemic, and it belongs to the descriptive studies that aim to describe and analyze reality using a social survey with a deliberate sample, which was done by applying a questionnaire to a sample of (132) first-grade students. In the middle stage, to determine the reality of children's use of electronic games, identify their positive and negative effects on them, and then reach some preventive measures to protect children from negatives in light of the Covid 19 pandemic.

أحمد، أسماء مصطفى عبد الرازق، وعبد المنعم، أحلام فرج عليان. (2022). الألعاب الإلكترونية وتأثيراتها على الأطفال في ظل انتشار جائحة كوفيد-19. مجلة دراسات في الخدمة الاجتماعية، مج58, ع1 ، 1 - 31.

http://search.mandumah.com/Record/1277679

# المنطلقات النظريَّة للخدمة الاجتماعيَّة في إدارة الأزمات والكوارث

د. أسماء أحمد

يعتبر حدوث الأزمات والكوارث شيئًا طبيعيًّا في الحياة وأمرًا لا يمكن أن نتجنبه طوال الوقت، ويشهد العالم المعاصر جملةً متنوعة من الأزمات والكوارث، والتي تتطلب ضرورة وجود نماذج وأدوات واستراتيجيات وخطوات علمية مدروسة ومنظَّمة ومخطط لها مسبقًا حتى يمكن الاستعانة بها في كيفية التصدي لها، وتتعامل الخدمة الاجتماعيَّة عند مواجهة الأزمات والكوارث من خلال التدخل العاجل لتقديم الخدمات الفورية، ومواجهة المشكلات المترتبة على حدوث الأزمات والكوارث، وبهدف المساعدة على استعادة التوازن في المجتمعات، ومن هنا كانت الحاجة إلى تفعيل دور مهنة الخدمة الاجتماعيَّة، وتدخل الأخصائيين الاجتماعيين لتقديم الدعم والمساندة والتدخل العاجل والسريع لمساعدة أفراد المجتمع على كيفية التعامل مع تلك الأزمات والكوارث.

ويستعرض البحث الحالي المنطلقات النظريَّة للخدمة الاجتماعيَّة في إدارة الأزمات والكوارث، من خلال عرض مفهوم الأزمة، وأنواعها، والمراحل التي تمر بها، ومفهوم الكارثة، وأنواعها، والمراحل الأساسيَّة التي تمر بها، كما يستعرض البحث الفرق بين الكارثة والأزمة، وأسس ونماذج وخطوات التدخل المهني في الأزمات والكوارث في الخدمة الاجتماعيَّة.

# The Parameters of the Creditability of Arabic-Speaking Satellite Channels in Their Coverage of American Presidential Elections 2020

Journal of Positive School Psychology
**Dr. Emadeldin Aly Ahmed Gaber , Dr. Asmaa Abobakrelsadik Hassan Hegazy**

The study dealt with the determinants of the credibility of satellite news channels in the Arabic language in their coverage of the American presidential elections 2020, and with regard to the determinants of the credibility of news channels from the perspective of news values emerged the values of bias, balance, then immediacy, then freedom to address, then depth of coverage, then suspense, then exclusivity The journalistic scoop, followed by respect for individuals' freedom of expression and opinion.

The results of the study showed a low degree of credibility of news channels in their coverage of the US presidential elections 2020, as the criterion of bias emerged in coverage of the US presidential elections 2020, while the criterion of credibility came in coverage when talking about the US elections in a late order.

Scopus

# The Relationship between Social Variables Related to Parents and the Academic Achievement of their Children during Corona Virus

Information Sciences Letters

**Osman Sirajeldeen Ahmed, and Elsayed Abdalrahman**

This research paper aims to identify the relationship between the social variables related to parents and impact on the academic achievement of their children after the transition from school education to home schooling during the COVID-19 epidemic. These social variables that the study focused on are gender, age, educational level and work status. To achieve this goal, a random sample of 88 families was selected in the Emirate of Fujairah, with the use of questionnaire and interview tools to collect data. The research provides scientific knowledge about the state of home- schooling during corona virus by studying a case study of the role of the family in e-learning. The most important finding of the study is that there is a relationship between the social variables related to parents and their interest in the academic achievement of their children's during home-schooling.

**Keywords:** Education, Remote schooling, Parents, COVID-19, Pandemic, UAE, Home-schooling

## مسارات الحياة الاسرية في ظل جائحة كوفيد-19 بالتطبيق على الأسرة الإماراتية

د. السيد محمد عبد الرحمن، د. سامة عجمي

تناول المقال بالبحث والدراسة مسارات الحياة الأسرية في ظل جائحة كوفيد-19 من خلال أربع متغيرات هي: معدلات الزواج، معدلات الطلاق، رعاية الأطفال، والعلاقة بين الأزواج وهدف البحث فيما هدف الى معرفة الأسباب المؤثرة على معدلات الزواج والطلاق خلال جائحة كوفيد- 19، والتعرف على أساليب رعاية الأطفال خلال جائحة كوفيد –19ومعرفة طبيعة التفاعل الاجتماعي بين أفراد الأسرة منذ ظهور الجائحة.

اعتمدت الدراسة على وصف وتحليل وتفسير الأدبيات والمعلومات المتوافر عليها والمرتبطة بمتغيرات الدراسة وتحليل إحصاءات(معدلات) الزواج والطلاق المتوفرة عن مجتمع الدراسة، وكذا جمع المعلومات حول رعاية الأبناء والعلاقة بين الأزواج والزوجات من خلال المناقشات الجماعية عبر تقنية  (Microsoft Teams)

من أهم النتائج التي توصلت اليها الدراسة: تعتبر جائحة كوفيد-19 هي التجربة الاجتماعية الأولى التي فرضت تأثيرها على كل أفراد الأسر كما أدت جائحة كوفيد-19إلى تغيير في مسارات الحياة الأسرية عما كانت عليه قبل الجائحة فظهرت أنماط سلوكية واجتماعية وثقافية جديدة ساهمت في الحفاظ أدوار ووظائف أفراد الأسرة.

The article dealt with research and study the trends of family life during the Covid-19 pandemic through four variables: marriage rates, divorce rates, childcare, and the relationship between spouses. Learn about childcare methods during the Covid-19 pandemic and the nature of social interaction between family members since the outbreak of the pandemic.

The study relied on the description, analysis and interpretation of the literature and information related to the study variables and analyzing the marriage and divorce statistics (rates) available from the study community, as well as Gathering information about childcare and the relationship between husbands and wives through group discussions group.

Among the most important findings of the study: The Covid-19 pandemic is the first social experiment that imposed its impact on all family members, and the Covid-19 pandemic led to a trend in the paths of family life from what it was before the pandemic. and functions of family members.

# فعالية برامج المنظمات غير الحكومية في تحقيق الأمن الاجتماعي للعمالة غير المنتظمة في ظل جائحة كورونا- كوفيد 19

مجلة كلية الخدمة الاجتماعية للدراسات والبحوث الاجتماعية - جامعة الفيوم - مصر

د. رمضان إسماعيل

هدفت الدراسة الى تحديد فعالية برامج المنظمات غير الحكومية في تحقيق الامن الاجتماعي للعمالة غير المنتظمة في ظل جائحة كورونا- كوفيد 19، وتنتمي الدراسة الحالية إلى نمط الدراسات التقييمية، وتعتمد الدراسة الحالية على منهج المسح الاجتماعي بالعينة لأعضاء مجالس إدارات المنظمات غير الحكومية المهتمة بالعمالة غير المنتظمة، وأجريت الدراسة بالمنظمات غير الحكومية المهتمة بالعمالة غير المنتظمة بمحافظة الإسماعيلية وعددهم (12) مؤسسة، وبلغ مجتمع الدراسة (107) مفردة من أعضاء مجالس إدارات المنظمات غير الحكومية المهتمة بالعمالة غير المنتظمة، وتوصلت نتائج الدراسة الميدانية وفقاً لترتيب الأولوية من وجهة نظر عينة الدراسة الى فاعلية برامج المنظمات غير الحكومية في تحقيق الامن الاجتماعي للعمالة غير المنتظمة في ظل جائحة كورونا المتمثلة في تحقيق الامن الاقتصادي والامن الصحي والامن البيئي.

The study aimed to determine the effectiveness of nongovernmental organization programs in achieving social security for irregular employment in light of the Corona-Covid 19 pandemic. The study was conducted with non-governmental organizations interested in irregular employment in Ismailia Governorate, and their number is (12) institutions, and the study population reached (107 ) members of the boards of directors of non-governmental organizations interested in irregular employment, and the results of the field study reached according to the order of priority from the point of view of the study sample to: The effectiveness of non-governmental organization programs in achieving social security for irregular employment in light of the Corona pandemic, represented in achieving economic security, health security and environmental security.

عبد الفتاح, رمضان إسماعيل. (2022). فعالية برامج المنظمات غير الحكومية في تحقيق الأمن الاجتماعي للعمالة غير المنتظمة في ظل جائحة كورونا- كوفيد 19. مجلة كلية الخدمة الاجتماعية للدراسات والبحوث الاجتماعية, 26(1), 67-122.

# إسهامات رأس المال الفكري في تحقيق التحول الرقمي لتحسين الخدمات الاجتماعية للمسنين ذوي الإعاقة

د. رمضان إسماعيل

هدفت الدراسة الى تحديد دور رأس المال الفكري في تحقيق التحول الرقمي لتحسين الخدمات الاجتماعية للمسنين ذوي الإعاقة، وتتبع هذه الدراسة نمط الدراسات الوصفية التحليلية وتعتمد علي منهج المسح الاجتماعى بالعينة لأعضاء مجالس إدارات بالمؤسسات المعنية بالمسنين بصفة عامة وذوى الاعاقة بصفة خاصة، واتساقاً مع متطلبات الدراسة الراهنة فقد اعتمد الباحث على مقياس  دور رأس المال الفكري في تحقيق التحول الرقمي لتحسين الخدمات الاجتماعية للمسنين ذوي الإعاقة، وأجريت الدراسة بالمؤسسات المعنية بالمسنين بمحافظة الإسماعيلية وعددهم (7) مؤسسة وبلغ مجتمع الدراسة (91) مفردة من أعضاء مجالس إدارات والهيكل الوظيفى، وتوصلت نتائج الدراسة الميدانية وفقاً لترتيب الأولوية من وجهة نظر عينة الدراسة الى فاعلية رأس المال الفكري في تحقيق التحول الرقمي لتحسين الخدمات الاجتماعية للمسنين ذوي الإعاقة فى تحقيق رأس المال البشري ورأس المال الهيكلي ورأس المال الاجتماعي.

The study aimed to determine the role of intellectual capital in achieving digital transformation to improve social services for the elderly with disabilities, This study follows the pattern of descriptive and analytical studies and relies on the method of a sample social survey for members of boards of directors in institutions concerned with the elderly in general and people with disabilities in particular, The study was conducted in the institutions concerned with the elderly in Ismailia Governorate, which numbered (7) institutions, and the study population reached (91) individual members of boards of directors and the job structure, The results of the field study, according to the order of priority from the point of view of the study sample, showed the effectiveness of intellectual capital in achieving digital transformation to improve social services for the elderly with disabilities in achieving human capital, structural capital and social capital.

عبد الفتاح, ر. إ., & رمضان إسماعيل. (2022). إسهامات رأس المال الفكري في تحقيق التحول الرقمي لتحسين الخدمات الاجتماعية للمسنين ذوي الإعاقة. مجلة كلية الخدمة الاجتماعية للدراسات والبحوث الاجتماعية, 27(2), 215-260.

# VII.   College of Law

## Right to Informational Self-determination as a General Civil Right: Analytical study of the European Regulation for the Protection of Personal Data and the Provisions of European Judiciary

Journal Sharia and Law
**Dr. Mohammed Hassan**

The research discussed the right to informational self-determination as a general civil right, which was inaugurated through the work analyzed by the European regulation of personal data protection under the European judiciary.

It was defined as the human right to control and monitor the processing of his personal data under a contractual or legal bond. It included many properties, the highest of the importance of which: The right of the subject to access his processed data, The right to transfer it, the right to correct it, the right to delete it (the right to be forgotten), The right to restrict the processing, The right to object to the processing, the right to prevent automatic data control for marketing purposes.

**Citation:** Ali, Dr. mohammed Hasson (2021) "Right to Informational Self-determination as a General Civil Right: Analytical study of the European Regulation for the Protection of Personal Data and the Provisions of European Judiciary," Journal Sharia and Law: Vol. 2021: No. 88, Article 8.

**Available at:** https://scholarworks.uaeu.ac.ae/sharia_and_law/vol2021/iss88/8

# رؤية فقهية في التقارب بين بعض أحكام قانوني الاعسار والافلاس

**د. محمد حسن**

تناول البحث أوجه التماثل والتقارب في إجراءات النظام القانوني للإعسار في المرسوم بقانون رقم 19 لسنة 2019 والنظام القانوني للإفلاس في قانون رقم لسنة 2016 حيث نظم المشرع إجراءات التسوية المالية في قانون الإعسار وهي تقابل إجراءات الصلح الواقي من الإفلاس وأجاز للمدين المدني بشروط معينة استمرار نشاطه وأجاز للمدين التاجر إمكانية إعادة هيكلة نشاطه ونظم إجراءات إشهار إعسار وتصفية أموال المدين المدني وكذلك نظم إجراءات إشهار وتصفية أموال المدين التاجر.

وأشار البحث إلى التحول الذي شهده مفهوم العمل التجاري نحو مفهوم أوسع هو المشروع الاقتصادي. وتوسع المشرع الإماراتي في تحديد نطاق تطبيق قانون الإفلاس التجاري بحيث يطال الشركات المدنية التي تمارس نشاطاً مهنياً وترك لقانون الإعسار النشاط المهني والحرفي الفردي والأشخاص الطبيعيين الذي لا يمارسون مهنة أو حرفة معينة. وأوصى البحث بدمج التشريعين في تشريع واحد تحت مسمى " قانون الإعسار المدني والتجاري".

The research dealt with similarities and convergence in the procedures of the legal system of insolvency in Decree-Law No. 19 of 2019 and the legal system of bankruptcy in Law No. of 2016, where the legislator organized the financial settlement procedures in the insolvency law, which corresponds to the procedures of preventive composition from bankruptcy and permitted the civil debtor with certain conditions to continue his activity and authorized the debtor The merchant has the possibility of restructuring his activity and systems of procedures for declaring insolvency and liquidating the funds of the civil debtor, as well as systems of procedures for publicizing and liquidating the funds of the merchant debtor. The research indicated the transformation witnessed by the concept of commercial work towards a broader concept, which is the economic project. The UAE legislator expanded the scope of application of the commercial bankruptcy law to include civil companies that practice a professional activity and left to the insolvency law the professional and individual professional activity and natural persons who do not practice a specific profession or craft. The research recommended merging the two legislations into one legislation under the name "The Civil and Commercial Insolvency Law".

د. محمد حسن (2022). رؤية فقهية في التقارب بين بعض أحكام قانوني الاعسار والافلاس. مجلة العلوم القانونية, 16(8), 25-57.

## التكييف الفقهي والقانوني للكفاءة بين الزوجين في الفقه الإسلامي وموقف قوانين الأحوال الشخصية

**أ. د. خلف محمد**

يدور البحث حول معنى الكفاءة في الفقه الإسلامي والقانون الوضعي ، وبيان مكانتها هل هي شرط لإتمام العقد ، أم أنها شرط لصحته ، ثم يوضح أن الذي تشترط فيه الكفاءة هو الزوج ، ويبين ما يترتب على ذلك ، ثم يبين الهدف والمقصد من اشتراط الكفاءة ، وهل عناصره ثابتة أم متغيرة حسب العرف والمجتمع ، ثم استعرض قوانين الأحوال الشخصية في البلاد العربية ، التي ذكرت الكفاءة ونصت عليها في القانون ، واستعرض قانون الأحوال الشخصية الإماراتي وذكر مواد الكفاءة بالتفصيل مع التعليق عليها ، وكذلك ذكر مواد قانون الأحوال الشخصية السوري . كما ذكر قوانين البلاد العربية التي لم تنص على الكفاءة، موضحا موقفه منها، راجيا أن تنص عليها.

## التكييف الفقهي للحساب الجاري في المصارف الإسلامية والأحكام الشرعية المترتبة عليه

**أ. د. خلف محمد**

يدور البحث حول حكم معاملة الحساب الجاري التي تجريها المصارف الإسلامية ، وتكييفها الشرعي والقانوني ، وخلص البحث إلى أن الحساب الجاري قرض ، وهذا التكييف اعتمدته المجامع الفقهية وهيئات الرقابة الشرعية والمؤسسات المالية، ثم ناقش الأحكام الشرعية المترتبة على كون الحساب الجاري قرضا ، ومنها ملكية المصرف للمال ، وأن عليه ضمانه، وله غنمه وعليه غرمه ، ومنها عدم استحقاق صاحب الحساب الجاري أي من الأرباح ، وعدم مشروعية اشتراط جوائز أو زيادة من صاحب الحساب الجاري ، وعدم مشروعية ذلك إذا أعطاه المصرف من دون اشتراط مادام المصرف مدينا له ، وهناك مسائل فيها اختلاف كالزيادة على القرض أو الجوائز عند الوفاء وبعده ، وكذلك ناقش حكم التسهيلات والخدمات التي يقدمها المصرف لصاحب الحساب الجاري ، وناقش أيضا حكم خصم المصرف من الرصيد في كل شهر عند وصوله إلى حد أدنى معين، وحكم زكاة هذا المال، والإضافة النسبية في هذا البحث بيان الآثار المترتبة على كون الحساب الجاري قرضا.

# التعليم الأساسي ودوره في ترسيخ القيم الإنسانية

**أ. د. خلف محمد**

يدور حول أهمية وكيفية غرس القيم والأخلاق في منظومة التعليم الأساسي ، وذلك باتباع أساليب جديدة تناسب العصر ، وتتقبلها نفوس هذا الجيل ، وهذا أمر أصبح ضروريا ، لأن أساليب نشر القيم الأخرى التي لا تناسب مجتمعاتنا أصبح متاحا لكل شخص ، بطرق سهلة ومشوقة وممتعة ، فلا بد من أن نحصن أبناءنا ويكون لديهم القناعة بقيم مجتمعهم ، والمناعة من تسلل القيم الأخرى إليهم ، حتى يعيشوا بأمن وأمان أسوياء أصحاء نافعين لأنفسهم ولمجتمعاتهم ، وتقع المسؤولية الكبرى على منظومة التعليم ، لأنها أم المهن ،  والإعلام والثقافة البيئية والمجتمعية  ما هي إلا صورة عن التعليم .

**ففي المقدمة:** بينت أهمية التعليم الأساسي ودوره في بناء وصقل شخصية الإنسان، وضرورة بث منظومة القيم في المناهج الدراسية كلها سواء أدبية كالقراءة والكتابة، أو علمية كالرياضيات والأحياء والكمياء، أو ترفيهية كالتربية الرياضية أو الموسيقية بأسلوب مناسب مباشر وغير مباشر، وتقنية حديثة.

**المبحث الأول:** ذكرت أهم القيم والمبادئ التي يركز عليها في التعليم الأساسي، كالصدق، وحب الوطن، والكرامة الإنسانية، والعدالة، والأمانة ....

**المبحث الثاني:** وفيه نموذج مقترح لبث القيم في مناهج التعليم الأساسي، وذلك بذكر نماذج في مختلف المواد، كدروس القراءة، وكيف تتضمن قيما إنسانية يلاحظها المتعلم، وترسخ في ذهنه، وكذلك ذكرت نماذج في المواد العلمية عند عمل التجارب والبحث في المختبرات والبحث عن الحقيقة، واحترام الرأي الآخر، ونماذج حتى في الألعاب الرياضية والترفيهية، وذلك حتى إذا تجاوز الطالب هذه المرحلة تصبح القيم الإنسانية أمور ثابتة في حياته سلوكا وتطبيقا وفكراً.

# حوكمة استخدام الذكاء الاصطناعي في العمل القضائي

## قراءة قانونية في الميثاق الأخلاقي الأوروبي بشأن استخدام الذكاء الاصطناعي (AI في النظم القضائية وبيئتها (CEPEJ)

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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 الاردنية الهاشمية وذلك من خلال ربط المبادئ الاخلاقية التي ركز عليها الميثاق ، وواقع استخدام الذكاء الاصطناعي في البيئة القضائية بهدف حوكمة هذا الاستخدام وابراز الاشكاليات القانونية التي تمكن ان 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

**كلمات مفتاحية:** الحوكمة، الذكاء الاصطناعي، النظم القضائية، الميثاق الأخلاقي، المفوضية الأوروبية لكفاءة العدالة

# المتطلبات القانونية للبنوك الاسلامية الرقمية: النموذج الاماراتي

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هدفت الدراسة الى توضيح الأطر القانونية والتنظيمية لترخيص البنوك الاسلامية الرقمية في دولة الامارات العربية المتحدة. كما هدفت الى 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 الإسلامية الرقمية من الداخلين الجدد في صناعة الخدمات المالية الإسلامية. وهذا يجعل الحاجة ملحة إلى وضع معايير واضحة لآلية عمل البنوك الاسلامية الرقمية وتنظيم الصيرفة الاسلامية الرقمية وهذا يستدعي تعديل الإطار القانوني المنظم للبنوك الاسلامية الرقمية للعمل على تعزيز كفاءتها واثبات قدرتها على التنافس في السوق المالية اذ ان هناك العديد من العقبات التي تقف امامها.

**الكلمات المفتاحية:** البنوك الرقمية، البنوك الإسلامية، التكنولوجيا المالية، التمويل الإسلامي، الخدمات المصرفية.

# تقييم النظام القانوني لحقوق ذوي الاعاقة في الامارات

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هدفت هذه الدراسة إلى تسليط الضوء على الحقوق المقررة لذوي الإعاقة في التعليم والتوظيف في مؤسسات التعليم العالي بدولة الامارات بموجب الاتفاقية الدولية لحقوق الأشخاص ذوي الإعاقة والتي صادقت عليها دولة الامارات وبموجب القانون الاتحادي بشأن حقوق المعاقين رقم (29) لسنة 2006 بهدف تقييم الاجراءات التنظيمية المتبعة في مؤسسات التعليم العالي لحماية حقوق ذوي الاعاقة انفاذا لأحكام القانون.

## مدى المسؤولية الجنائية عن استخدام الذكاء الصناعي في المجال الطبي

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تزايدت مشاركة المنظومات الذكية في اتخاذ القرار في كثير من مجالات الحياة في العصر الحالي، وأمتد التطور الهائل في تكنولوجيا الذكاء الاصطناعي إلى مجال الرعاية الصحية، وكان للأجهزة الطبية المبرمجة بتقنيات الذكاء الاصطناعي دورا فاعلا في تطور الأداء الطبي، وفي الحد من الخطأ الطبية، وتتبع الأمراض وإدارتها بسرعة فائقة، غير إن قدرتها على اتخاذ قرارات ذاتية قد يفضي إلى أضرار تؤدي إلى وفاة الغير وإلحاق أذى ببدنه. ذلك أنه لا يعتمد فحسب على الرموز والخوارزميات، ولكن أيضا على تجارب حياته الخاصة فتتولد لديه الاستقلالية لاتخاذ القرار من بين عدة خيارات بديلة.

وتتعدد تطبيقات الذكاء الاصطناعي في مجال الرعاية الصحية، فتمتد إلى تشخيص العديد من الأمراض  وتحليل كميات ضخمة من البيانات بحثاً عن مواد يُحتمل أن تكون أدوية وعقاقير جديدة ولا شك أن القواعد التقليدية الحالية التي تنظم المسؤولية الجنائية للأطباء، في نطاق شروط ممارسة العمل الطبي ، وفي سلامة المنتجات الطبية من العيوب ، غير كافية لمواكبة التطور الهائل والمتسارع في مجال تطبيق منظومة الذكاء الاصطناعي ،ولابد من تحديث التشريعات لمواكبة التحديات والاستجابة للتطورات التقنية خاصة مع إطلاق دولة الإمارات لمنظومة العمل في الذكاء الصناعي وشعار الحكومة الذكية وتوسيع استخدامها في مختلف المجالات. وقد جرى تناول هذه المسائل من خلال تقسيم الدراسة إلى ثلاثة مباحث: الأول، تعرض فيه الباحث لماهية الذكاء الاصطناعي ومميزات استخدامه في المجال الطبي؛ والمبحث الثاني، لمدى المسؤولية الجنائية لمُنتج تقنيات الذكاء الاصطناعي في المجال الطبي؛ والمبحث الثالث، لدراسة مدى المسؤولية الجنائية للطبيب عن استخدام الذكاء الاصطناعي، وانتهى الباحث بتسطير النتائج التي خلص إليها والتوصيات التي أشار إلى ضرورة الأخذ بها.

# The extent of criminal responsibility for the use of artificial intelligence in the medical field

**Dr. Ameen Abdo Mohamed Dahmash**

The participation of smart systems in decision-making has increased in many areas of life in the current era, and the tremendous development in artificial intelligence technology has extended to the field of health care, and medical devices programmed with artificial intelligence techniques have had an active role in the development of medical performance, in reducing medical errors, tracking diseases, and manage it super-fast,; However, it is ability to make personal decisions may lead to damages that lead to the death of others or harm to their body. Because he depends not only on codes and algorithms, but also on his own life experiences, it has the independence to make a decision among several alternative options.

There are many applications of artificial intelligence in the field of health care, extending to the diagnosis of many diseases and the analysis of large amounts of data in search of potentially new medicines and drugs. The safety of medical products from defects is not sufficient to keep pace with the massive and accelerating development in the field of application of the artificial intelligence system. Legislation must be updated to keep pace with challenges and respond to technical developments, especially with the launch of the UAE work system in artificial intelligence and the smart government logo and the expansion of its use in various fields. These issues were addressed by dividing the study into three sections: the first, in which the researcher presented the nature of artificial intelligence and the advantages of its use in the medical field; and the second topic, the extent of criminal liability for the product of artificial intelligence techniques in the medical field; And the third topic, to study the extent of the criminal responsibility of the doctor for the use of artificial intelligence, and the researcher ended by underlining the results he concluded, and the recommendations that he indicated the necessity of adopting them.