



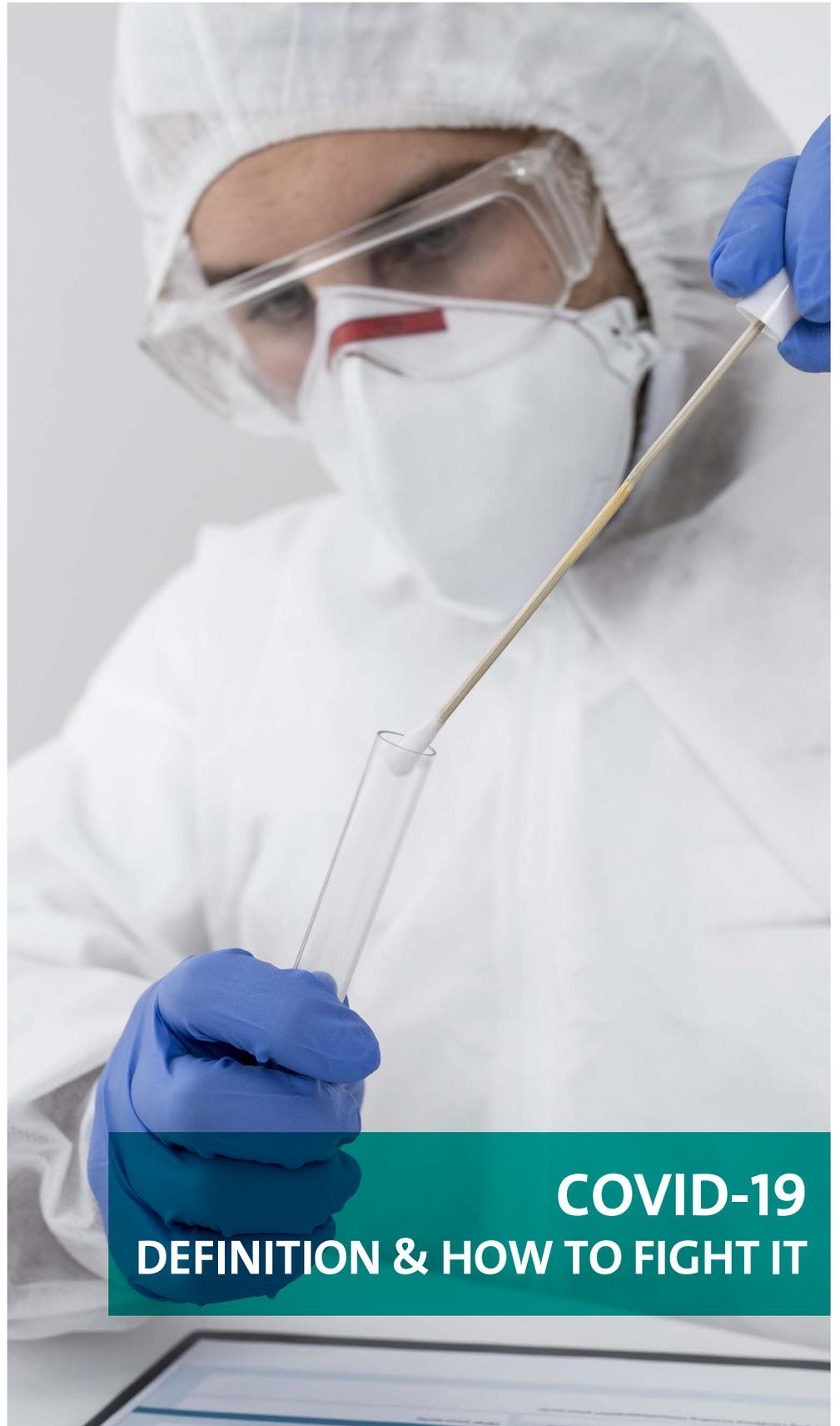
**AACP 5th Pharmacy Faculty
Development Workshop 2020**



DUPHAT 2020



Pharmacy Open Day



**COVID-19
DEFINITION & HOW TO FIGHT IT**



جامعة العين
AL AIN UNIVERSITY

COLLEGE OF PHARMACY

INTERNATIONAL ACCREDITATION

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THINK PHARMACY

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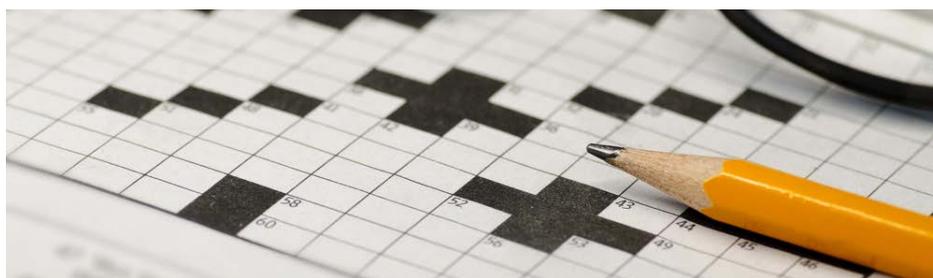
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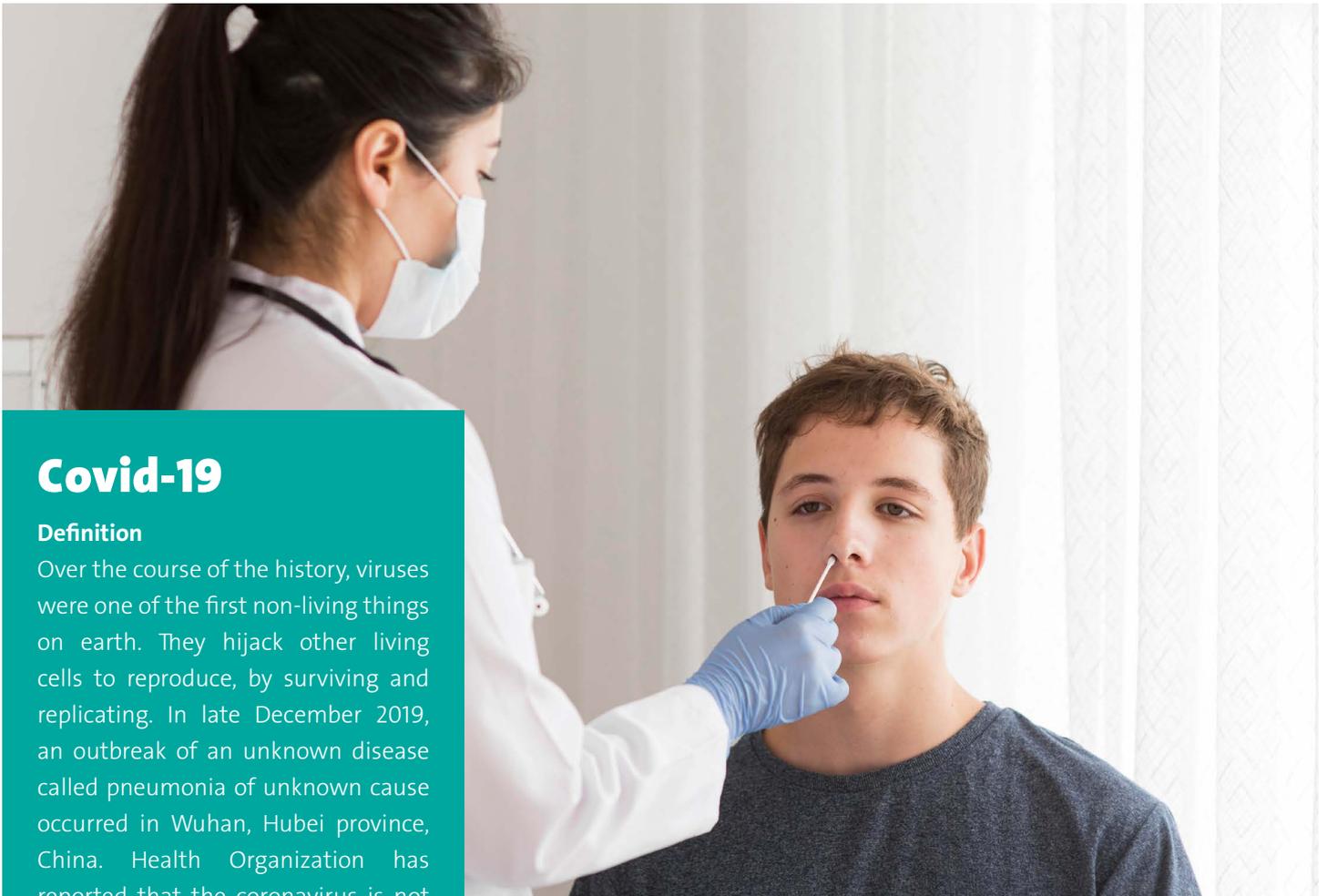
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Covid-19

Definition

Over the course of the history, viruses were one of the first non-living things on earth. They hijack other living cells to reproduce, by surviving and replicating. In late December 2019, an outbreak of an unknown disease called pneumonia of unknown cause occurred in Wuhan, Hubei province, China. Health Organization has reported that the coronavirus is not a global emergency because of what is happening in China, but because it is spreading rapidly across the world and the number of different countries infected continues to increase.

The coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus SARS-CoV-2, standing for severe acute respiratory syndrome coronavirus 2.

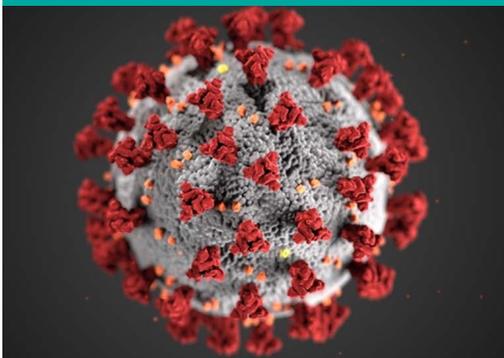


Fig-1: Coronaviruses are group of viruses covered with proteins spikes giving it a shape of a crown.

Symptoms:

SARS-CoV-2 infection may be with no symptoms or it may cause a wide spectrum of symptoms, such as mild symptoms of upper respiratory tract infection. On average it takes 5–6 days from when someone is infected with the virus for symptoms to show, however it can take up to 14 days.

The most commonly reported symptoms are fever, cough, fatigue, pneumonia, and complicated shortness of breath. Less common symptoms include headache, diarrhea, runny nose, and productive cough. From March to June 2020, a number of studies on the incidence/frequency of loss of smell and taste have been conducted in many countries and continents (Asia, Europe, America). Patients with mild symptoms have been reported to recover and may not require hospitalization, while patients with severe conditions have been reported to experience progressive respiratory failure due to damage to the lungs that could result in death.

Differences and similarities between COVID-19 and the common cold.

Firstly, both of them are caused by viruses and they cause a respiratory disease. Secondly, they can be transmitted by contact, droplets in the air from an infected person coughing, sneezing or talking. They can be prevented by limiting the interaction with people who are infected and frequent, thorough hand washing.

On the other hand, COVID-19 seems to spread more easily than the common cold and causes more serious illnesses in some people.

	COVID-19	Common Cold
Incubation period	up to 14 days	about 2 days
Common symptoms	Fever, Cough, Tiredness	Stuffy nose, sneezing sore throat
Less frequent symptoms	Nasal congestion, Diarrhea, sore throat	Tiredness and body aches

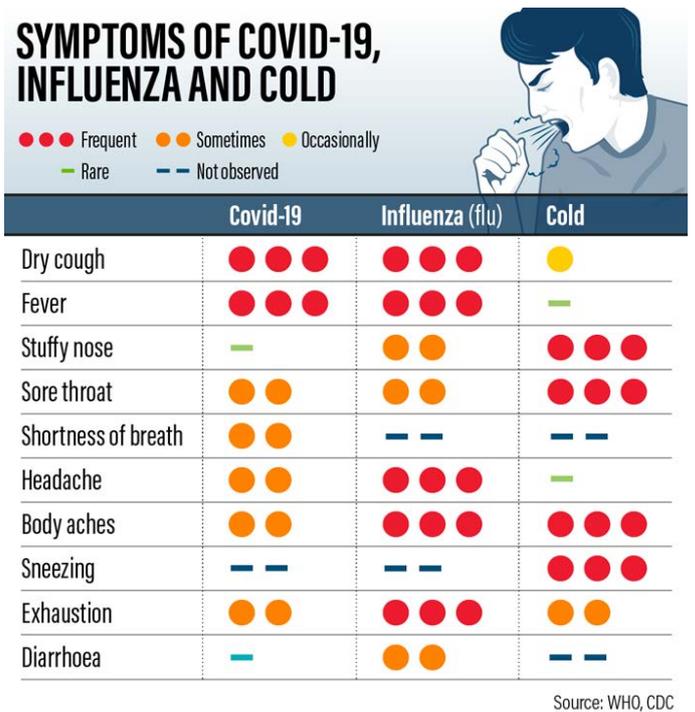


Fig-2: Symptoms of Covid-19, Influenza and Cold.

Causes

Corona virus spreads through droplets when sneezing, coughing, or speaking and can enter the human body directly through our eyes, nose, or mouth. The virus lives on a lot of surfaces for hours, so people can easily pick it up on their hands and infect themselves if they touch their face, this is actually what an average person does 20 times an hour. However, as the pandemic progressed, the primary mode of transmission became person-to-person transmission.

How to confirm that you have covid-19?

Just because you don't feel well, it doesn't mean you have coronavirus. There are two key symptoms to be aware of:

1. Continuous dry cough – this is not the need to clear your throat but repeatedly coughing for no reason throughout the day, and without mucus coming up, which is common with a cold.

2. Fever – this not simply feeling overheated but having an internal body temperature of above 37.7C (100F). If you don't have a thermometer, one indicator is your chest and back will feel hot if another

person touches it.

Some of the symptoms of flu and COVID-19 are similar, making it hard to tell the difference between them based on symptoms alone. If you've been exposed to the virus or show mild symptoms of COVID-19 such as fever, cough, fatigue, shortness of breath, a sore throat, headache etc. you are recommended to get tested. Diagnostic testing such as the following can help determine if you are sick with COVID-19 or not:

a. RT-PCR (reverse transcription polymerase chain reaction) test: A nasopharyngeal swab gently inserted into the nostrils to collect specimen from the back of the nasal cavity of a patient to test for the presence of Coronavirus (SARS CoV-2). The RNA is converted to DNA through a process called 'reverse transcription' for detecting viruses. This test is the most effective and accurate to detect the SARS-CoV-2 virus and it takes at least 24 hours to produce a result.

b. DPI (Diffractive Phase Interferometry) test: It is a laser-based DPI technology using blood samples via finger prick (similar to sugar blood test) for examining the virus. The blood sample will be inserted into a special device and laser light shone onto it.

Infected blood cells produce a diffuse pattern. The result will be produced within minutes. The main role of this method is detecting inflammation in cells. This method is not accurate enough since it does not confirm that the infection is indeed Covid-19.

c. Chest imaging (X-ray or CT): Covid-19 pneumonia, which can be detected through chest imaging, causes the density of the lungs to increase. This may be seen as whiteness in the lungs on radiography which, depending on the severity of the pneumonia, obscures the lung markings that are normally seen; however, this may be delayed in appearing or absent. Nevertheless, most patients with covid-19 infection have a mild illness and do not develop pneumonia. That is why the chest radiograph may be normal in up to 63% of people with covid-19 pneumonia, particularly in the early stages.

Treatment

The treatment of COVID-19 depends on enhancing the immunity level of patients, treating the symptoms and easing complications, as there is no specific treatment for the virus to date. Scientists and physicians have been trying several methods

for the treatment of COVID-19 so far. Covid-19 can be treated based on the severity of the disease. The terms generally used to classify the illness are: 1) asymptomatic 2) mild 3) moderate 4) severe

- Management of asymptomatic and mild Covid-19

Being asymptomatic means that you have no symptoms. If you tested positive for covid-19 but you do not manifest any symptoms or you have just mild symptoms such as sore throat, fatigue, fever, shortness of breath, you are recommended to self-isolate immediately. You can treat yourself at home with resting, simple painkillers such as paracetamol and NSAIDs (non-steroidal anti-inflammatory drugs) such as ibuprofen, antipyretics for fever and pain, cough syrups, traditional remedies, drinking plenty of fluids, vitamin C effervescent tablets and other over the counter medicines. DO NOT take antibiotics to treat covid-19. If you think you are developing more severe symptoms seek medical help as soon as possible.

- Management of moderate and severe Covid-19

If your illness gets worse than the mild category then you may move towards being a moderate or severe case, with inflammation lower down in the lungs, so symptoms like continuous cough, temperature exceeding 37.8°C, feeling tired, being breathless, feeling pain or pressure in your chest, losing the sense of smell, diarrhea, Nausea and vomiting may appear. You must seek medical help as soon as possible. Members of the medical staff will check your vitals and blood oxygen level. They may listen to your lungs and you may need chest x-ray or CT scan. If your condition was recognized as severe and you already developed or you have the possibility of developing pneumonia, you may need extra oxygen so doctors will connect you to a machine that can breathe for you, called a ventilator. You may also get fluids through a tube, or IV, in your arm to keep you from getting dehydrated. It is recommended that the following drugs not be administered as treatment or prophylaxis for COVID-19, outside of

the context of clinical trials:

1. Antiviral therapy:

The FDA has approved the antiviral drug Remdesivir (Veklury) to treat COVID-19 in hospitalized adults and children who are age 12 and older in the hospital. Remdesivir developed a decade ago which was failed in clinical trials against Ebola in 2014. Remdesivir was showed to shorten the hospital stay of COVID-19 patients but not all clinical trials have found that remdesivir is effective. Remdesivir is currently under trials at more than ten medical institutions in Wuhan and has been known to prevent MERS-CoV. More than 85% of patients received anti-viral agents, including Oseltamivir (75mg every 12h orally), Ganciclovir (0.25g every 12h intravenously), and Lopinavir/Ritonavir tablets (400/100/mg twice daily).

2. Monoclonal antibody:

Two monoclonal antibody medications have received emergency use authorization from the FDA. Monoclonal antibodies are proteins created in a lab that can attack spike proteins of the virus and help the immune system. One medication is called Bamlanivimab, and the second medication is a combination of two antibodies called Casirivimab and Imdevimab. Both drugs are used to treat mild to moderate COVID-19 in people who have a higher risk of developing serious illness due to COVID-19. Treatment consists of a single intravenous infusion given in an outpatient setting. To be most effective, these medications need to be given soon after COVID-19 symptoms start and prior to hospitalization.

3. Convalescent plasma therapy:

The FDA has also granted emergency use authorization for convalescent plasma therapy to treat COVID-19. Convalescent plasma is blood donated by people who've recovered from COVID-19. It's used to treat people who are ill with COVID-19 in the hospital. The theory is that their plasma contains antibodies that will attack this particular coronavirus.

4. Immune modulators:

a. Baricitinib: The FDA has granted an emergency use authorization for the rheumatoid arthritis drug baricitinib (Olumiant) to treat COVID-19 in some

cases. Baricitinib is a pill that seems to work against COVID-19 by reducing inflammation and having antiviral activity. The FDA states baricitinib may be used in combination with remdesivir in people who are hospitalized with COVID-19 who are on mechanical ventilators or need supplemental oxygen.

b. Corticosteroids: The U.S. National Institutes of Health recently recommended the corticosteroid dexamethasone for people hospitalized with severe COVID-19 who require supplemental oxygen or mechanical ventilation. Other corticosteroids, such as prednisone, methylprednisolone or hydrocortisone, may be used if dexamethasone isn't available.

5. Other treatments:

a. Anti-malarial: An old anti-malarial, chloroquine phosphate, has been effective in inhibiting the exacerbation of pneumonia due to its anti-viral and anti-inflammatory activities. Whereas, the late researches are claiming that hydroxychloroquine given alone or with other drugs didn't improve the condition of people hospitalized with mild to moderate COVID-19. Furthermore, researchers at the University of Pennsylvania reported that hydroxychloroquine was no more effective in preventing the contraction of the new coronavirus in people who took the drug as opposed to those who didn't.

b. Herbal treatments: There was widespread use of Traditional Chinese Medicine during the last SARS-COV outbreak and it is currently being used in China. The five most commonly used herbs were Astragali Radix (Huangqi), Glycyrrhizae Radix Et Rhizoma (Gancao), Saposhnikovia Radix (Fangfeng), Atractylodis Macrocephalae Rhizoma (Baizhu), and Lonicerae Japonicae Flo.

c. IV vitamin C: patients diagnosed with COVID-19 and hospitalized with the breathing difficulty and abnormal biomarkers seem to be candidate for a short period of high dose intravenous vitamin C treatment in the early periods of the disease. However, the concern that may arise with high-dose vitamin c treatment is osmotic

cell death of immune cells, but not apoptosis, which could generate a local inflammation in alveolar medium. Therefore, IV glucocorticoid treatment must be added to attenuate the possible inflammatory complications of high-dose vitamin c treatment.

6. Vaccine development:

Finally, several vaccines have been approved for emergency use worldwide. The UAE was one of the first countries in the world to launch a national campaign to immunize the community. Here's a look at some of the most potential and important vaccine projects:

a. Moderna / National Institutes of Health.

The company began testing its two-dose messenger RNA (mRNA) vaccine in March in a phase 1 clinical trial, with promising results. In late July, Moderna began phase 3 clinical trials of the vaccine, and in late August, the company officials said preliminary phase 1 trial data showed that the vaccine elicited a promising immune response in 10 people between the ages of 56 and 70 as well as 10 people over age of 70. In mid-November, Moderna officials reported that their vaccine had achieved an effective rate of 94 percent in initial phase 3 trial results. Experts said more testing and more information is

needed. On November 30, Moderna officials said they would apply to the FDA for its vaccine to be approved for emergency use. Company executives said the vaccine could be available by December 21 if it receives FDA approval.

b. Pfizer / BioNTech / Fosun Pharma.

Drugmaker Pfizer teamed up German Biotech Company BioNTech and Chinese drugmaker Fosun Pharma to develop a two-dose mRNA vaccine. In mid-August, company officials said the vaccine had produced a "robust" response in a phase 1/2 clinical trial. The company launched a phase 3 trial in late July, with a goal to recruit 30,000 people from the United States, Brazil, Argentina, and Germany. In October, the company said it received approval to enroll children as young as 12 years in the trial. As of late October, the trial had enrolled more than 42,000 people. On November 9, the company announced that its vaccine had been more than 90 percent effective in clinical trial participants. A few days later, company officials announced they were applying for an emergency use authorization from the FDA for their vaccine. It was the first regulatory approval in the United States for a COVID-19 vaccine. The officials said the vaccine could be available to high-risk groups as early as mid-December. On December 8, the FDA released documents that

reported the Pfizer vaccine offers some protection after the first dose and nearly full protection after a second dose.

c. Wuhan Institute of Biological Products / Sinopharm.

Chinese company Sinopharm is testing an inactivated virus vaccine developed by the Wuhan Institute of Biological Products. After a successful phase 1 trial, researchers launched phase 3 trials in the UAE in July and a month later in Peru and Morocco.

d. Beijing Institute of Biological Products / Sinopharm.

Sinopharm is testing a second inactivated virus vaccine developed by Beijing Institute of Biological Products. Phase 3 trials began in June in the UAE and in September in Argentina. In September, the UAE approved the vaccine for use on healthcare workers even before the results of the phase 3 trials.

e. Sinovac Biotech.

This Chinese company launched phase 3 trials of its inactivated virus vaccine in Brazil in July, Indonesia in August, and Turkey in September. In August, the Chinese government issued emergency approval for the vaccine for use on high-risk groups.

f. Gamaleya Research Institute.

This Russian institute developed a vaccine that includes two adenoviruses, Ad5 and Ad26. In August, President Vladimir Putin announced that the country's



regulatory agency had approved the vaccine, even before phase 3 trials had started. Russian officials later said the vaccine had received a “conditional registration certificate.” Results of a phase 12/ trial found that the vaccine elicited an immune response with mild side effects. Phase 3 trials are currently under way in Russia, Belarus, United Arab Emirates, and India.

Complications and long-term effects of COVID-19

The following complications were seen in COVID-19 patients:

1. Acute Respiratory Distress Syndrome (ARDS)

The virus will damage the lungs by causing a leakage of fluid, so the lungs will not be able to supply the body with oxygen and a ventilator must be used in those patients until the lungs return to function normally. ARDS is one of the most common complication that happened during the Chinese outbreak.

2. Acute Liver Injury

However, it is not known if it is due to the virus or other reasons.

3. Acute Kidney Injury

It is a serious complication and patients might start dialysis until kidneys return to work. Unfortunately, it might progress to chronic kidney disease in some patients which means that kidney's damage is permanent.

4. Acute Cardiac Injury

Based on reports of hospitalized patients in China, heart problems like arrhythmias were seen.

5. Secondary Infection

Although secondary infection is not common, but it is highly associated with death. It happens due to impairment of the immune system, so patients with coronavirus might get another infection (usually bacterial). Bacterial species involved in secondary infection are Streptococcus and staphylococcus.

6. Intravascular Coagulation Disorders

Impairment in the clotting response of the body, leading to internal bleeding or organ failure. On the other hand, some patients had exaggerated clotting response and developed deep vein thrombosis (DVT) or arterial clots.

7. Chronic Fatigue

Patients may have symptoms like brain fog, severe fatigue, pain, trouble thinking, or dizziness.

8. Muscle Death

In extremely rare cases, breakdown of muscles fibers might happen.

Long term effects of COVID-19:

COVID-19 can lead to extended signs and symptoms, permanent organ damage, and circulatory system disorders. It is important to state that many long-term effects of COVID-19 are still unknown. Long-term signs and symptoms of coronavirus are

classified to:

- Common like fatigue, shortness of breath, cough, joint pain, chest pain.
- Less common like muscle pain, headache, fast heartbeat (tachycardia), loss of smell or taste, cognitive impairment (this includes memory, concentration, or sleep problems), rash or hair loss.

COVID-19 affect the essential organs which are the brain, heart, and lungs. It can affect the brain and lead to seizures, temporary paralysis and stroke. Also, in the future, patients might be at high risk of having Parkinson's and Alzheimer's diseases. Infected patients will have mood changes, cognitive impairment, insomnia, and lethargy. Cardiac imaging of patients after recovery from the virus showed enduring damage of the heart in both patients who had severe and mild symptoms, this means that they are at high risk of developing heart failure or other complications in the future. Since pneumonia is a common complication of COVID-19, patients will have long-term breathing problems due to damage of the air sacs of the lung. Circulatory system is also affected, and patients might develop blood clots that can lead to heart attacks and strokes. On the other hand, the virus can also affect blood vessels and make them weaker, so bleeding and organ damage occurs.





UAE response to the pandemic

Due to lockdown and social distancing, the government launched smart government services to conduct official government transactions from home. In order to overcome psychological impact of the pandemic, 50 mental health experts participated in the national campaign for mental support.

UAE helped other countries around the world by sending medical supplies. Those countries include Italy, Kazakhstan, Colombia, Iran, and Ukraine. Also, UAE supported the United Kingdom by changing an exhibition space it owns in London, into a 4,000- bed field hospital. On the economic front, the government specified flexible stimulus budget to AED 256 billion and reduced electricity and water bills by 20% for three months. Banks in UAE can have loans with zero costs against collateral provided by the Central Bank of the UAE, also banks postponed due payments for their clients for 6 months and allowed temporary relief from payments for all affected private sector companies and retail customers in the UAE.

Recently restrictions on flights became In order to prevent the spread of the virus, on the 8th of March the government closed schools and universities and adapted

distant learning program for about 1.2 million students. On the 25th of March, all international flights were temporarily suspended, and lockdown was announced. The National Disinfection Program started on March 26 to sanitize public areas, streets, and public transportation. Also 24 COVID-19 test centers were opened across the country. The number of tests conducted until 28th of December reached 20,440,219 tests.

much easier, all travelers to UAE must have the test with negative result within 96 hours before take-off. Passengers who are travelling to Abu Dhabi will be asked to wear wristband and apply self-isolation for 10 days. Also, they will get an additional PCR test on day six, if they are staying in the emirate for six days or more, and on day 12, if they are staying for 12 days or more.

UAE started voluntary national vaccination program and people in the first line of defense against COVID-19 are given the priority to receive it. About 1,167,251 people in UAE have received the Sinopharm vaccine which have an efficacy of 86 % in the prevention of the virus. On 23rd of December, the first batch of Pfizer vaccine reached Dubai, and the priority of receiving it is given to senior citizens and frontline workers.

Interview with a pharmacist: Dr. Osama Tabbara

Dr. Osama Tabbara is one of the most prominent doctors who has had a huge impact on the pharmacy field in modern times. He received his bachelor's degree in pharmacy from King Saud university. He pursued a diverse career full of accomplishments as he became the head of the Parental Nutrition department, and going from there he headed the Oncology department in King Faisal hospital. He received his board certification and worked in several known healthcare institutions, including King Saud university and helped build Cleveland hospital in the UAE.



1 Why did you choose the field of pharmacy?

I chose this field because this field is one of the few majors that combine science and entrepreneurship. Additionally, in this profession, leadership and self-development are key factors to a successful pharmacist career which attracted me even more to choose this major over other majors which I was considering at that time, such as agricultural engineering.

2 Tell us about your professional career?

First of all, I am proud to have graduated with honors from King SOAUD university. And my goal as a fresh graduate was to work in King Faissal hospital which was considered one of the top ten hospitals globally. However, I was disappointed by not receiving any response from them which affected me negatively. This low point did not stop me, on the contrary it gave me motivation and I started sending my resume to several hospitals until I got accepted in the military hospital in al Taif. I used to stay and work after my late night shifts, in addition to summarizing pharmaceutical drugs. As a result, I was assigned as head of pharmacy. After that, I moved to work in outpatient pharmacies, and I became an expert in the oncology as well as IV nutrition. After that, I was asked to start and preside a drug information center. I was always making sure to write down everything I learnt until I was able to write a book that included everything about pharmacy. Afterwards, I decided to go back and join the clinical department in King Faisal Hospital. I spent 11 years working there, four of them was in nutritional support and then I took it upon myself to train all Arab pharmacists in the hospital in that field. After all these years I was promoted to be in charge of the oncology department in the hospital.

3 Tell us about your experience in the UAE?

I joined Al Rahba hospital as head of pharmacy. And I played a part in making it one of the best pharmacies in the country. Afterwards, I was asked to handle al Mafraq hospital pharmacy. 6 months later, I received a generous offer to go back to Saudi Arabia. Several years later, I went back to the UAE and handled Cleveland hospital pharmacy as I played a role in making it one of the top pharmacies in the world. In addition, I had other contributions to the hospital. Our vision was to make Cleveland hospital pharmacy world leader in pharmacy practice.

4 When did you decide to find your own way and open your private company?

Since 2012, I had a vision that I wanted to make into reality, which was creating a network that focuses on exchanging pharmacy knowledge and experiences. I created this network that initially consisted of 1600 specialized members that respond to any parenteral nutrition inquires. Throughout the years, I developed this network to answer any hospital pharmacy related questions. In addition, it contained an online library and other services for pharmacy students and working pharmacists. Most of this company's services are free to the public. Our goal was to exchange knowledge and to discover talented individuals and leaders so that we can support them and put them on the right path.

5 Who was your role model?

I didn't have any role model, as my mentality in life was to take every instance with someone who treated me in a negative way and turn it into a positive.

6 How do you spend your free time?

- 1- Calligraphy, specializing in Persian font.
- 2- I play all kinds of musical instruments.
- 3- Table tennis champion.
- 4- World class swimmer, and a swimming instructor.
- 5- Bird hunting and fishing.

7 How did COVID-19 affect your personal life?

I learned to use all my life experiences in order to take the correct decision. I also learned the importance of time management and adapting to all possible situations. As well as, following the famous saying, "perfection is the enemy of good". In other words, means that striving for perfection might cause stress, delay productivity and induce anxiety. Therefore, striving for good is always better than striving for perfection.

8 Words of advice for future pharmacists:

- 1- Embrace change
- 2- Learn and teach
- 3- Overcome and adapt
- 4- Be a game changer
- 5- Perfection is the enemy of good
- 6- Expose yourself to the market
- 7- Be passionate and brave

You must stay updated with the job market to continue the learning and self-improvement process, and the best way to do so, is to constantly attend conferences because the purpose of attending conferences is not about learning only, but also making a change.



AACP 5TH PHARMACY FACULTY DEVELOPMENT WORKSHOP 2020



Al-Ain University launched the 5th Regional Workshop to develop the faculty skills of Colleges of Pharmacy. This event was held under the title “Best Practices for Planning and Evaluation

of Interprofessional Education” and in cooperation with the Accreditation Council for Pharmacy Education-ACPE and the American Association of Colleges of Pharmacy-AACP. The workshop aimed

to plan and evaluate interprofessional education, and members were able to exchange experiences, knowledge, and ideas in various medical and pharmaceutical fields.



DUPHAT 2020



The College of Pharmacy students from both Al Ain and Abu Dhabi campuses, participated in Dubai International Pharmaceuticals and Technologies Conference & Exhibition – DUPHAT, which was a center point for students' scientific posters. This exhibition aimed at exchanging experiences with different institutions, expanding students' knowledge, and improving their research skills. It is also worth mentioning that pharmacy students have won 5 awards at DUPHAT for both

poster and oral presentations. This event was an excellent opportunity for our pharmacy students to interact with other students, health care professionals and pharmaceutical companies from all over the world who visited this exhibition. Al Ain University participates annually in this event to enhance students' skills and keep them updated about the new technology in the pharmaceutical manufacturing and pharmacy supplies.



WORLD PHARMACIST DAY



25th of September commemorates the international World Day of Pharmacists. Pharmacy students at Al-Ain university have celebrated this day in-campus and out-campus. They started the day by thanking their doctors, and giving them small gifts to appreciate their efforts in

building up qualified future pharmacists. They also distributed some gifts to doctors from other colleges to share the good moments with all the university. Out-campus, pharmacy students at Al-Ain university aimed to raise the awareness among high school students about the

importance of the pharmacist's role. This was achieved by visiting a number of schools in Abu Dhabi, and giving them brief presentations about the different roles that a pharmacist plays and the importance of the pharmacist in the healthcare system.



PHARMACY OPEN DAY



College of pharmacy-Abu Dhabi campus organized an open day that included several activities. The day started with an exciting theater play, which was written and directed by talented pharmacy students. A cultural exhibition was organized by

the students to show their work, in addition to the traditional food from other cultures to represent the peaceful coexistence among multi-nationalities citizens in the UAE. More exciting competitions and games were played on the stage, and the event was ended with

awarding and appreciating talented students of the college of pharmacy. This event was aimed to create a fun atmosphere for the students away from the stress of the exams and strengthen the bond between the students and the faculty members.



Virtual Orientation Day

In response to prevent the spread of COVID-19, College of Pharmacy held a virtual orientation day through MS teams to welcome the new students who joined the college at the beginning of the academic year 2020- 2021. The academic faculty and staff have introduced themselves, and delivered talks about college rules, students' rights, and course evaluation. They also touched on academic information to help junior students who had just started their university life. The meeting has concluded with students from each batch who sharing their university experiences and challenges and offering advice to the freshmen students.





EVENT SCHEDULE

September 2020

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Thursday 17th Sep 2020

Presenter
Ismail Moemen



Video about Al Ain University

3:05 – 3:10 Welcoming speech (Dr. Mohammad Ghattas, Deputy Dean, College of Pharmacy)

3:10 – 3:20 Self-introduction (each faculty member)

3:20 – 3:45 Talks on:

- 1) Academic Information (Prof. Mohammad Hudaib)
- 2) Student's Rights and Students Advising (Dr. Nezar Al Bataineh)
- 3) Registration (Dr. Sawzan Abu Hamdah)
- 4) Staff Evaluation by the students (Dr. Azza Ramadan)
- 5) Introduction to Plagiarism and Moodle online program (Dr. Rose Ghenrawi)
- 6) DUPHAT and other conferences (Dr. Zelar Kharaba)
- 7) Safety Information "Laboratory regulation" (Dr. Arshad Mahmmod)
- 8) Pharmacy College activities (Dr. Mohammad Fawzi and Ms. Kawthar Kayed)

3:45 – 3:55

Sharing sessions by senior students:

- Dina Alaga – Fifth Year
- Abdallah and Molham – Fourth Year
- Sedra Kremesh – Third Year
- Mira – Second Year

• Welcoming Video by students

3:55 – 4:00 Q&A sessions

End of event

ME
RA
OM
AE
SH
MH
RA
MG



Communication Skills Workshop

The College of Pharmacy has organized a training session on presentation and communication skills with Dr. Deyaedin Alshafie for senior students. The main goal of this session was to build a strong fundamental background for students

to create a structured presentation that reaches the listeners, get the message across the audience, and effectively connect with them. Along with other tips to help the students present their ideas successfully to create powerful

presentations. These are considered essential skills that are required in all fields and not only limited to the pharmacy major. Improving such skills satisfy the labor market needs by providing qualified pharmacists.

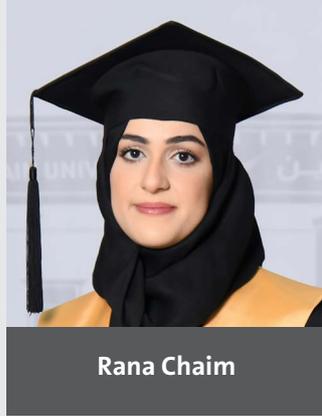


Honor list students

5th year



Radwa



Rana Chaim

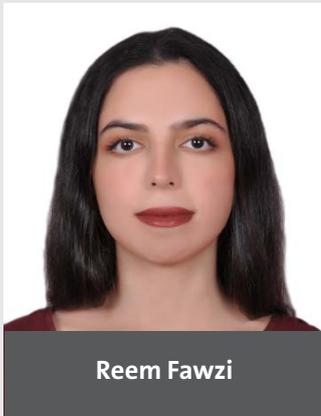


Nour Sammani

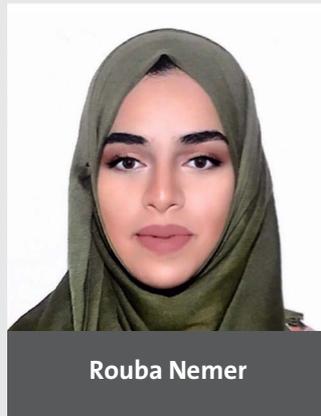


Israa Turki

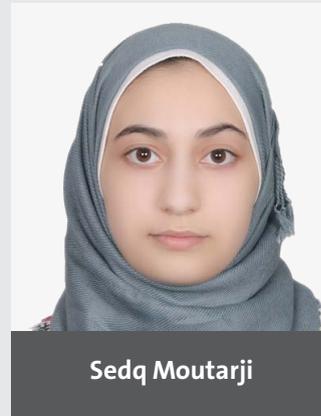
4th year



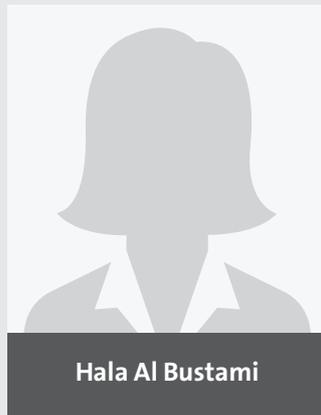
Reem Fawzi



Rouba Nemer



Sedq Moutarji



Hala Al Bustami



Rola Ghoaddar

3rd year



Alin Alkwarit



Abdulrahman Bawabji



Parisa Kouhgard



Sedra Kremesh

2nd year



Rahf Mohammed



Ftemeh Abdi



Khawla Abdul Rahman

Duphat Student projects

Molecular modelling studies on human Equilibrative nucleoside transporter, hENT1

Authors: Isamil Moemen, Sedra Jamal

Supervisor: Dr. Mohammad Ghattas, Dr. Azza Ramadan, Ms. Shaima Hassan

Equilibrative nucleoside transporters (ENTs) are transmembrane proteins that play a central role in nucleoside physiology and pharmacology. To date, four human equilibrative nucleoside transporters isoforms have been identified (hENT1-4), with hENT1 being the most characterized. Physiologically, ENTs facilitate the transport of nucleosides, the precursors of nucleic acids DNA/RNA, and energy molecules ATP/ GTP. Clinically, ENTs are primary drug targets that modulate the efficacy of > 30 FDA/EMA approved drugs, including anticancer and cardiovascular agents. ENTs mediate the transport of anticancer nucleoside analog permeants into cancers cell, causing DNA/RNA damage and subsequent cell death. Alternatively, ENTs serve as a molecular target for drug binding, such as antihypertensive and antiarrhythmic agents causing transport inhibition. While specific ENT1 protein residues involved in interactions with permeants and inhibitors have been identified, the structural interaction requirements of permeants and inhibitors with hENT1 is unclear. To this end, we will utilize molecular modelling techniques to draw out general pharmacophores for each type of molecule. Two lists of known ligands will be created, one for permeants and another one for inhibitors. Consequently, several pharmacophores will be elucidated for each type of ENT1 ligands – based on the smallest and most rigid molecules present in each category. These pharmacophores will be examined for their efficiency via screening the corresponding test set against each one of them. Then the obtained pharmacophores will be assessed and ranked based on their success rate. Accordingly, top-ranked pharmacophores will be selected for the ENT1 permeants as well as for the ENT1 inhibitors. Pharmacophores to be obtained from this study should have great potential for the discovery of new drugs for cancer and heart-related diseases.

Qualitative and Quantitative Analysis of Chemical Composition of the Volatile Oil Hydrodistilled from *Rosmarinus officinalis* L.; A Medicinal Herb Growing in UAE

Authors: Abdallah Abu Hajal, Mohammad Sakkal

Supervisor: Prof. Mohammad Hudaib

In the present study the chemical composition of the essential-volatile oil obtained from leaves of *Rosmarinus officinalis* L., a medicinal herb grown in UAE (AL-Rahba region), was analyzed by means of gas chromatography and mass spectrometry (GC-MS). The oil was obtained from the collected plant material by steam distillation (Hydrodistillation) using a Clevenger type apparatus. The “Mass-Spectral matching combined with retention indices (Kovat’s index) comparison” approach was applied for constituents’ identification. The principal component of the oil was 1,8-cineole, a compound that is well-known for its medicinal and pharmaceutical values. Camphor and α -pinene were also among the other major constituents identified in the tested oil. The study revealed a characteristic, mainly quantitative, volatile fingerprint (oil profile) of the Emirati rosemary when compared with plant growing in other countries; however, the qualitative profile was comparable with the general composition known to rosemary oil.

Structure-Activity-Relationship on MN02 Derivatives as an Antimicrobial Agent

Authors: Radwa Essam, Rola Audeh

Supervisor: Ms. Kawthar Kayed, Dr. Mohammad Ghattas

With the increase in microbial resistance to existing antimicrobial agents, there is a constant need for the development of novel drugs to fight these infectious diseases. Accordingly, previous studies have explored inhibitors of enoyl-acyl carrier protein reductases (FabI), which is a crucial enzyme for the survival of bacteria, as it is involved in the last step, which also happens to be the rate-limiting step in fatty acid biosynthesis for the cell wall formation. In a previous study done by our group, a small biosphenolic compound named MN02 was discovered, which showed antibacterial activity that functions through inhibition of FabI enzyme. Accordingly, we tested twenty derivatives of MN02 identified by computational approaches including similarity search and docking. All selected derivatives were tested for their antibacterial activity using disc diffusion and MIC against a panel of gram-negative and gram-positive bacterial strains. Interestingly, thirteen compounds showed interesting antibacterial profile especially with regard to their inhibition activity against the methicillin-resistant strain. Furthermore, docking was performed on all tested compounds and accordingly, many interesting structure-activity relationship conclusions were made.

Microbial contamination of Al Ain University's students' cell phones

Authors: Rola Goaddar, Marwa Kanafani

Supervisor: Dr. Rose Ghemrawi

Undergraduate students handle their cell phones in several places, even in toilets, getting them exposed and contaminated with a variety of pathogenic and non-pathogenic microorganisms. Therefore, cell phones can be vehicles for transmitting pathogens, including drug-resistant pathogens to households. The aim of this study is to identify pathogenic microorganisms present on the surface of the touch screens of smartphones of Pharmacy students of Al Ain University, Abu Dhabi Campus, understand the causes leading to this contamination and find the best ways/habits to clean and disinfect smartphones. Therefore, a questionnaire on mobile phone usage/habits was distributed to all participants. Swab samples of mobile phones are collected using sterile saline water and cotton swabs, before and after cleaning these smartphones with a sanitizer. Samples were inoculated on Nutrient agar, MacConkey agar, and Eosin Methylene Blue agar. We found that AAU students' cell phones are highly contaminated by bacteria mainly the screen and the home button due to the fact that they take them to the toilets and don't clean them regularly. Our preliminary data indicated that these bacteria are rod and spherical shaped, gram negative, lactose non fermenters and lactose/sucrose fermenters. Therefore, full guidelines about hand hygiene, and frequent decontamination of mobile devices are recommended in Universities, to limit the risk of cross-contamination and transmission of drug-resistant pathogens through mobile phones.

Knowledge, Attitude and Practice on the Use of Topical Bleaching Agents among Women in Abu Dhabi, UAE

Authors: Jima Yasir, May Zeid

Supervisor: Dr. Mohammad Bostanudin

The United Arab Emirates (UAE) has a high usage of topical bleaching agents, however since it is highly affected by the knowledge and attitude of parents, it is crucial to assess these in a rapidly developing and changing society of Abu Dhabi, UAE. The study utilized cross-sectional survey method and the respondents were among women in the city of Abu Dhabi, UAE. A specific self-administered questionnaire assessing the knowledge, attitude variables as well as other potential factors related to these variables were explored based on feedback from 409 respondents. Majority of the respondents were students (68.6 %), single (69.6 %), with undergraduate educational level and aged below 20 years old (40.8 %). The most common reason of applying bleaching products on skin is to look beautiful (47.4 %). Even though 73.8 % of them will not use the products without knowing the ingredients, however almost 50 % of them did not know the harmful components. Even though many studies reported the potential side effects of it towards our health, however it has been recorded that only 13.4 % of them believed that the toxic ingredients may general health. While the knowledge towards the potential toxic effects and the harmful components of bleaching products have been noticed to be low, it is expected that there is correlation between knowledge and attitude towards the practice of it. Hence, there is a need to educate women about the possible risks in order to minimize the potential side effects of bleaching agents.

Knowledge and Attitude towards Stroke Risk Factors and Warning Symptoms in UAE population

Authors: Rawan Atassi, Ranem Sobeh

Supervisor: Dr. Azza Ramadan

Background and Purpose: Stroke remains to be a significant cause of mortality and morbidity worldwide. In UAE, it is estimated that 8,000-10,000 patients suffer from a stroke attack annually; i.e., one person per one hour gets a stroke. In UAE, there is limited available data about the level of knowledge of various aspects of stroke in the community, including early presentation to hospitals within a short therapeutic window for effective treatment. Therefore, this study aims to determine national stroke recognition and the correct response to stroke signs and symptoms. **Subjects and Methods:** A cross sectional community-based survey of stroke knowledge and awareness will be conducted where a questionnaire will be randomly distributed to a total of 400 participants between the ages of 18 and 85 years in the UAE. The participants will answer ~30 questions about different aspects of stroke including sociodemographic data, knowledge of what the disease is, recognition of risk factors; signs and symptoms and the associated immediate appropriate response/action. Statistical analysis will be conducted with Graph Pad Prism software using Student's t-test or one-way ANOVA with post-hoc Bonferroni's corrections. P value of < .05 will be considered as statistically significant. **Expected Results:** We predict that stroke recognition and correction action/response rate will correlate with age and level of education. Overall, the findings of this study will be integral to increasing public awareness about stroke and appropriate response time for effective treatment/therapy.

The prevalence of Depression, Anxiety and Stress among Pharmacy Students in Al-Ain University

Authors: Aya Al Qassem, Rana Abdul Rahman
Supervisor: Dr. Zelal Kharaba, MS. Raghad Aldulaymi

Background

Recent studies reported high levels of stress and anxiety among medical students. While, normal levels of stress may improve performance, excessive levels have been linked with negative deterioration of physical and mental health. Examination is considered one of the main stressors for medical students. In this study, we aim to investigate the prevalence of stress, anxiety, and depression among pharmacy students and compare the levels before and after examination.

Methods

This cross-sectional study will be conducted in December 2019 (before and after final examinations). The study subjects are undergraduate pharmacy students from all levels of study. The study aims to recruit > 100 students (male and female). Study participation will be random and entirely voluntary. The instrument used in this study will be DASS-21, which is a valid and reliable scale to measure depression, anxiety, and stress. Data will be collected through a self-administered questionnaire that consists of two parts. The first part includes sociodemographic information and the second part includes the DASS-21 scale. In order to investigate the effect of final exams, the latter part will be redistributed to each participant during final exams.

Results and conclusion

We expect high levels of stress, anxiety, and depression among pharmacy students. Levels might be especially high during examination period. If a correlation is established, we will move into identifying the different predisposing factors attributing to the high incidence of psychological distress.

Analysis of Expired Medications in Arab Households

Authors: Fady Saad, Naji Qasem
Supervisor: Rose Ghemrawi

The accumulation of expired medications in households is a universal problem and most individuals remain unaware about how to dispose unused or expired medicines. The aim of this study is to therefore investigate the extent and structure of expired medications in Arab households, determine which therapeutic groups generate the most waste and assess drugs' disposal practices. This is a descriptive cross-sectional study conducted among residents of UAE, Lebanon, and KSA using a pre-validated structured online questionnaire. Statistical Package for Social Science (SPSS) is going to be used for statistical analysis. We hypothesize that there are relatively large quantities of expired medications in Arab households, with a high prevalence of antibiotics for systemic use and anti-inflammatory drugs; and that Arab households are unaware of the proper drug disposal. Therefore, Healthcare practitioners and community pharmacists are encouraged to offer trainings to educate customers on standard medicine disposal practices. Robust, safe and cost-effective pharmaceutical waste management program supported by media campaign is needed.

Prevalence, management, and associated factors of headache disorder among pharmacy students in Abu Dhabi, UAE.

Authors: Shaden R. Al-Atassi

Supervisor: Dr .Mohammad Bostanudin

Headache is one of the most common nervous system disorders that affecting people worldwide and has been frequently investigated in research studies due to high prevalence. Although unfavourably underestimated among student population, it has been associated with significant negative outcomes including quality of life deterioration and functional impairment. As pharmacy students is considered to have better exposure to public health concepts and may serve an important role in the future quality of care in the community, therefore investigating headache prevalence among them may be beneficial. A cross-sectional descriptive study has been conducted involving undergraduate pharmacy students of Al Ain University of Science and Technology, United Arab Emirates to determine the prevalence, characteristics, associated factors, and behavioural management of headache among them in July 2019. Self-administered questionnaire consisting open- and close-ended questions was adapted and adopted based on the International Headache Society criteria and the resulting data were analysed using SPSS version 22. The results showed that 82.6 % of 213 respondents suffered from headache in the last 12 months with 86.4 % of them were female and 13.6 % were male students. Among popular headache-triggering factors recorded were stress, examinations, and insufficient rest. Around 48.2 % of the drug users opted paracetamol as their drug of choice with only 24.8 % of them sought advice from healthcare professionals. Having demonstrated high prevalence without appropriate treatment, as well as lack of education and awareness, this demand comprehensive approach to raise awareness among individuals who are affected with such disorders.factors attributing to the high incidence of psychological distress.

Exploring the Reasons and Different Sources of Caffeine Consumption among the Students of Al- Ain University

Authors: Nour Sammani and Samar Ashour

Supervisor: Dr Zelal Jaber Kharaba

Over the past few decades, the experimental evidence of the consumption of caffeine among university students has increased. University students in today's society have become dependent on caffeine in order to perform at their best in multiple facets of their hectic lives, including classes, clubs, and internships. Students have a wide assortment of choices available as to decide the form of caffeine they want to use, like tea, coffee, soft drinks, energy drinks, or even caffeine tablets. Such companies market their products to young generation in particular i.e. students. Therefore, there is a need to determine the use of caffeine by students, particularly for 'academic purposes', and their knowledge of its beets, side effects and withdrawal symptoms. The aim of the current study was to determine (i) the use of caffeine for academic and non-academic purposes, (ii) which caffeinated products were mostly used, (iii) the frequency of caffeine use for academic purposes, among students at different universities of UAE. In conclusion, Caffeine consumption is an important issue that should be measured properly by researcher among different populations. Our results showed that 93.6% of college students consume caffeine once or twice daily and some exceeding five servings daily. Most of them prefer coffee as a main source of caffeine intake.



Selected Faculty Research



International Journal of
Molecular Sciences



Review

Endoplasmic Reticulum Stress and Unfolded Protein Response in Neurodegenerative Diseases

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Computer-aided approaches reveal trihydroxychroman and pyrazolone derivatives as potential inhibitors of SARS-CoV-2 virus main protease

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Engineering butylglyceryl-modified polysaccharides towards nanomedicines for brain drug delivery

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REVIEW ARTICLE



Effectiveness of testosterone therapy in hypogonadal patients and its controversial adverse impact on the cardiovascular system

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Review Article

Glucagon-like Peptide-1 Receptor Agonists Cardio-protective Effects: An Umbrella Review

Author(s): Asim Ahmed Elnour^a, Noora Al Hajri, Israa Yousif El Khidir, Abdulla AlAmoodi, Sahar Asim Ahmed, Adel Sadeq

Journal Name: Current Diabetes Reviews

Volume 16 , Issue 8 , 2020

DOI : 10.2174/1573399816666200522214554



Review

J Endocrinol Metab. 2020;000(000):000-000

What Are the Changes and Burden Associated With COVID-19 in Diabetes Management and Delivery of the Diabetes Services?

Rohan Sadera^a, Joyce Youssef^a, Azza Ramadan^b, Mohamed H. Ahmed^{c, d}

Biotechnology Law Report, VOL. 39, NO. 4 | Original Articles

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Exclusions from Patentability with an Emphasis on Biotechnological Inventions: A Comparative Study

By Ramzi Madi  Majed Abu Saleh  and Kawthar Kayed Published Online: 17 Aug 2020 | <https://doi.org/10.1089/blr.2020.29181.rm>Drugs & Therapy Perspectives
<https://doi.org/10.1007/s40267-020-00806-x>

ORIGINAL RESEARCH ARTICLE



Assessment of inappropriate prescribing of QT interval-prolonging drugs in end-stage renal disease patients in Jordan

Ahmad Z. Al Meslamani¹ · Dania Abu-Naser² · Derar H. Abdel-Qader³ · Mohammed S. Aljamal⁴ ·
Mohammed A Alsharif⁴ · Mohamed Ahmed Mohammed Alshrahili⁵ · Nadia Al Mazrouei⁶ ·
Osama Mohamed Ibrahim^{6,7}

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Entertainment part

Find the words hidden in this puzzle. Words may appear in any direction !

P	A	N	A	D	O	L	L	K	N	R	T	N
N	R	M	H	E	R	B	T	N	U	T	R	O
A	H	E	A	L	T	H	N	Y	T	M	E	L
N	Q	D	S	Y	U	L	E	P	R	A	L	H
T	W	I	W	C	I	O	M	A	I	L	L	E
I	S	C	F	H	R	R	E	R	T	K	I	R
B	M	A	S	K	M	I	L	E	I	D	K	B
I	O	T	F	D	R	O	P	H	O	O	N	A
O	G	I	L	S	T	C	P	T	N	C	I	L
T	N	O	N	J	F	V	U	T	I	T	A	M
I	A	N	I	R	I	P	S	A	B	O	P	E
C	S	S	A	N	I	T	I	Z	E	R	N	D
X	D	R	U	G	S	T	O	R	E	J	F	S

S	F	J	R	E	O	S	T	G	S	T	R	D	X
D	N	R	E	Z	I	T	I	N	S	S	C		
E	P	O	B	A	S	P	I	R	I	N	V	I	
M	A	M	I	T	U	V	J	F	N	O	N	T	
L	C	N	P	T	C	P	L	S	T	G	I	O	
A	N	O	H	O	P	F	D	R	O	F	I	O	
B	D	K	I	D	E	I	L	E	M	A	S	K	B
R	K	I	R	K	R	E	R	E	R	H	C	F	I
L	L	L	A	I	L	M	A	I	O	C	I	W	T
H	A	L	H	P	R	A	L	E	U	L	S	D	N
L	M	E	L	T	M	E	L	H	A	L	T	H	A
R	O	R	O	T	N	U	T	R	B	A	R	M	N
N	R	T	N	K	L	A	D	O	L	P	A	N	P



