



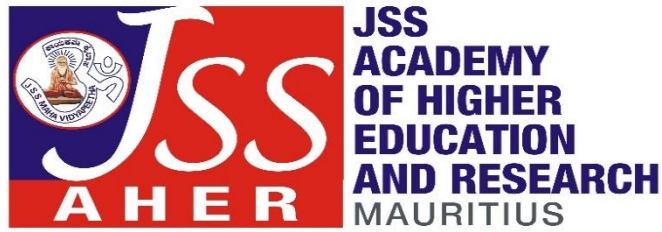
**JSS
ACADEMY
OF HIGHER
EDUCATION
AND RESEARCH
MAURITIUS**

A degree awarding institution registered with
the Higher Education Commission, Mauritius



JSS Health & Education Newsletter

**Volume I Issue III
September-December 2021**



**A degree awarding institution registered with
the Higher Education Commission, Mauritius**

About JSS Academy of Higher Education and Research, Mauritius (JSSAHERM)

The JSS Academy of Higher Education and Research, Mauritius (JSSAHERM) was established in 2018 with degree awarding powers at the start of activities in Mauritius, registered with the Higher Education Commission, Mauritius.

JSSAHERM is located on a sprawling eight- acre freehold campus at Bonne Terre, Vacoas, the only one of its kind in the country, comprising of some 15, 000 sq. mts of built- up area with necessary infrastructure. The campus also comprises of hostels for boys and girls students, sports facilities such as Volleyball, Basketball, Football and in- door games. There are also residential units for staff and guests.

Building on its philosophy of quality education at affordable costs, JSSAHERM aims to present itself as the destination of choice for higher education and training in Mauritius and the Indian Ocean region.

JSSAHERM launched the Bachelor of Pharmacy and the BSc (Hons) Cosmetic Science programmes in August 2020. The Bachelor of Pharmacy programme of JSSAHERM has received Pre- certification from the Accreditation Council for Pharmacy Education (ACPE), USA, making JSSAHERM the first institution in African region to get ACPE precertification.

JSS Mahavidyapeetha (JSSMVP), Mysuru, India is the sponsoring society of JSSAHER, Mauritius. JSSMVP has established more than 330 educational institutions in India, Dubai, Mauritius and USA, with a total student population over 50,000 and a staff strength over 12,000.

The parent institution for the establishment of JSSAHERM, is the JSS Academy of Higher Education & Research, Mysuru (JSS AHER, Mysuru, India), formerly known as the JSS University. JSSAHER, Mysuru, India is ranked overall in the band of 351-400 globally and ranked 2nd in India by the Times Higher Education (THE) Rankings 2021.

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Dr Ashish Wadhvani

Professor & Head

**Faculty of Health Sciences, School of Pharmacy
JSS Academy of Higher Education and Research,
Republic of Mauritius**

I am glad to learn about the third issues of newsletter “**JSSAHER Newsletter - Health & Education**” where in both the significant aspects “Health” and “Education” are covered.

“A good quality education is the foundation of health and well-being. For people to lead healthy and productive lives, they need knowledge to prevent sickness and disease”.

For any country, the health of the citizen is the priority specifically during this pandemic time and when the society is educated well, the people of the society will take up the responsibility to take care of their health and prevent the spread of diseases.

I am happy that we as an institution are evolving as a health-based education institution and is focusing to offer the programmes like Pharmacy, Biotechnology, Environmental Sciences, Cosmetic Sciences and Health System Management with the vision “to provide education that helps transformation of individuals and the society that reflects quality and excellence”.

I am confident that this newsletter covering the scientific articles on various aspects of health and education will be the hands-on information to the public and serve the purpose of ready to read health related material.

I extend my sincere congratulation to the team JSSAHERM for the success of this issue of the newsletter – “Health & Education” and wish to see the periodic issues, which will cover the latest scientific information and drug/vaccine developments across the globe.

A handwritten signature in blue ink, appearing to read 'Dr. Ashish Wadhvani', with a stylized flourish at the end.

Dr Ashish Wadhvani

The Influence of Covid-19: The Change from Offline to Online Education

From the Desk of Chief Editor:

The Pandemic has altered the educational landscape; it has pushed for greater efficiency in delivery techniques. Schools and educational institutions have been compelled to transition to the internet environment. A new standard has been established, and it is being taught online. While many institutions have migrated online through the acquisition of licenses for video conferencing software, the question is whether they have actually moved online.

When offline traditional teaching approaches are utilized online, they can threaten (or limit) the training's success.

When migrating from offline to online learning, a variety of difficulties arise: how to provide informal social contacts, how to maintain student attention, and even how to maintain active engagement. The majority of schools and other institutions struggle with these since their teaching materials do not address them and they have not received training on them.

Significant concerns

If one considers the global impact of Covid-19, at its peak, over 95% of learners were impacted, amounting to over 1 billion learners in absolute terms. This guaranteed that learners transitioned from offline to online delivery modalities and, more importantly, that the transition was seamless.

Closures of schools as a result of Covid-19

Five or ten years ago, this transition would have been extremely difficult, owing to the fact that live classes required high internet speed, and video classes were either unavailable or too expensive. While increased internet capacity has enabled this to become a reality, online education presents unique problems.

To begin, what age should the child be? Online education presents several difficulties for children under the age of five, primarily owing to their capacity to follow instructions, maintain an attention span, and even handle a technology like a computer. The third difficulty associated with less face-to-face interaction and the online environment is attention span, user motivation, class control, technological acceptance, and technical issues (bandwidth, device issues, etc.).

While zoom, google meet and other VC techniques are widely utilized, there are concerns in multi-student classrooms with a particular user's bandwidth being insufficient and hurting the general class quality; also, people utilizing mobile hotspots experience packet loss, resulting in poor video quality. Initially, instructors were just not prepared to provide high-quality courses remotely in their schools. However, considering where we are now, the majority of users are acclimated to and proficient with Video Conferencing technologies.

Everything regarding the offline environment

While an offline setting allows the teacher to observe all of his or her students, an online multi-student class has its own set of issues. A teacher cannot possibly pay attention to 40 kids (for example) at the same time. Colleges employ a flipped classroom model for this purpose, in which pre-recorded curriculum is distributed and teachers are available for question and answer sessions in a live manner.

Maintaining an appropriate teacher-student ratio is critical in this environment for class control. Self-learning and pre-recorded information have low completion rates due to user motivation loss.

Classes in real time

While live classes have a high completion rate, they are also highly instructor dependent. Another facet of online education that presents a barrier is social or peer learning. While live classes come closest to replicating a classroom experience today, modifications to content, methodology, and delivery must be made.

The world wide web

While the online world presents unique obstacles, it also offers numerous benefits. Students that use online methods benefit from faster learning (up to 50% less time), and their retention rates are higher (between 25-60% vs. 8%). (offline learning). The ability to go back and forth, learn at your own pace, and keep schedule flexibility all contribute to students' improved learning and, consequently, improved outcomes. EdTech companies have benefited enormously from this transition.

While considerable work has been done in online learning, much of it has concentrated on delivery, a greater amount of effort has to be done on pedagogy and content as well.

While the shift from offline to online was a reaction to an emergency, there has been widespread digital revolution. Online adoption has accelerated, and learners have migrated online. One thing is certain: online education is thriving and will continue to do so.

Dr. Khayati Moudgil
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Long Term Effects of Covid 19 in Recovered Patients

The coronavirus associated with severe acute respiratory syndrome type 2 (SARS-CoV-2) can cause damage to the lungs, brain, blood vessels, skin, nerves, kidney, and heart, increasing the risk of long-term health problems. The virus, however, may persist in the body for up to three months following diagnosis. This may result in some individuals receiving a second positive test result following their recovery, however this does not always signify the virus is still transmissible.

While the majority of persons with COVID 19 recover entirely within a few weeks, others continue to experience symptoms following their initial recovery. Post-COVID-19 problems are particularly prevalent in elderly adults and those with major medical illnesses such as diabetes, immunodeficiency disorders, cancer, or chronic diseases. However, even young and healthy individuals infected with the virus may experience symptoms for weeks or months.

The most frequently reported signs and symptoms are exhaustion, shortness of breath, new-onset diabetes, cough, joint and chest discomfort, insomnia, frequent headaches, loss of smell and taste, dizziness, fever, concentration issues, rapid heartbeat, depression, and maculopapular rash. According to a pilot study conducted in South Korea, 9 out of 10 coronavirus patients suffered post-disease symptoms such as weariness, psychological distress, and loss of smell and taste. Fatigue was the most frequently reported adverse impact, followed by difficulties concentrating.

According to a recent study of SARS-CoV-2 survivors, 30-40% of whom developed secondary infections, survivors of acute COVID-19 infection may be at a greater risk of bacterial, fungal, or other illnesses. Apart from post-COVID symptoms, patients may experience serious complications such as myocardial infarction, deep vein thrombosis, neurological symptoms such as seizures and stroke, gastrointestinal symptoms such as nausea and loss of appetite, pancreatitis, pneumothorax, and arthritis, as well as fungal infections such as mucormycosis.

The exact causes of post-COVID syndrome are not known but some **possible causes** are:

- Reduced or lack of response from the immune system
- Reinfection of the virus
- Multisystem inflammatory syndrome (MIS)
- Prolonged hospitalization due to severity
- Post-traumatic stress

Diagnosis:

The physician may require a comprehensive medical history and previous covid treatment to determine post COVID syndrome. Apart from examining the patient's temperature, blood pressure, pulse rate, SpO2 level, and respiratory function, the physician may order the **following tests** to determine the severity of symptoms:

Complete blood picture
Serum electrolytes
Kidney function test
Liver function test
C-reactive protein for inflammation level
Troponin test of heart condition
D-dimer, to check that no blood clots are present
Serum ferritin to check iron levels
ECG, Chest X-ray or CT Scan
Urine examination

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Compiled By:

Ms. Misbah Dhuny, 2nd Year, B Pharm Student, JSSAHERM

Black Fungus

What is Black Fungus Infection (MUCORMYCOSIS)?

Mucormycosis, or black fungus infection, is a dangerous but uncommon fungal infection that can be fatal. If it is not recognized and treated promptly, 50-80 percent of patients may die. This typically occurs in persons whose immune systems have been compromised by Coronavirus (COVID-19), viral infections, immunodeficiency disorders, malignancies, chronic diseases, or other medical conditions, or when patients take medications that suppress the immune system in an attempt to battle illness. Getting in contact with fungal spores in the environment causes black fungus. It can also develop in the skin if the fungus enters through a cut, scrape, burn, or other type of skin trauma. However, it is noted that Mucormycosis is a non-contagious disease that cannot be transmitted through direct or indirect contact between humans or between humans and animals.

What Causes Black Fungus Infection?

Mucormycosis is caused by fungus mucormycetes and molds of the order mucorales, which are found in the environment's air, notably in soil, decaying organic substrates, compost piles, animal dung, rotting wood, and plant material. This is immediately seen as black growth on rotting fruits and old bread. Fungi play a vital function on Earth and are necessary for a healthy ecology. Fungi first appeared 400 million years ago. They decompose organic trash and recycle nutrients trapped in the leaves and wood. Fungi that are normally innocuous but can take advantage of persons who have a compromised immune system and infect tissues. Because of this, black fungal infections are often known as opportunistic infections.

Mucor fungi produce millions of spores (dark-colored, tiny spherical structures) that float around in the air. When these spores drop on damp surfaces such as plant material, compost piles, animal dung, or soil, they germinate and develop thread-like structures known as mycelia. In general, most humans are not harmed by these fungus. Breathing in mucormycetes fungus spores, on the other hand, can induce an infection that can spread to other parts of the body and organs in those with compromised immune systems.

Types of mucormycosis

According to study, a black fungus infection can move through the circulation and affect body parts and organs.

- Pulmonary mucormycosis (lung) is the most common in cancer patients and those who have received a stem cell or organ transplant.
- Rhinocerebral mucormycosis (sinus and brain) - An infection in the sinuses can move to the brain. This is especially common in those who have uncontrolled diabetes or who have received a kidney transplant.
- Cutaneous mucormycosis (skin infection) occurs when fungus invade the body through damaged skin (due to surgery, severe burn or any type of skin injury).

- Gastrointestinal mucormycosis is common in young children, particularly those who have low birth weight and premature infants under the age of one month who have had surgery or are taking drugs that reduce the body's ability to fight sickness.
- Disseminated mucormycosis - This infection most usually affects the brain, but it can also affect other body parts and organs such as the heart, spleen, and skin.

What are the symptoms of mucormycosis?

Mucormycosis can affect a variety of organs and body parts. It can cause nasal blackening or discoloration, impaired or double vision, chest pain, breathing difficulty, and blood coughing. Symptoms vary depending on where the fungus is developing in the body.

Symptoms of *pulmonary mucormycosis* (lung) -

- Breathing difficulties or shortness of breath
- Chest ache
- Fever (a fever of more than 100 degrees Fahrenheit)
- Coughing that results in the production of crimson or black secretions

Symptoms of *rhinocerebral mucormycosis* (sinus and brain) -

- Fever and/or headache
- Congestion in the nose or sinuses
- One-sided facial swelling
- Black lesions in the upper interior of the mouth or on the nasal bridge

Symptoms of *cutaneous mucormycosis* (skin) -

- Pain in the face
- A tiny serum-filled bubble on the skin
- Skin ulcers or skin infections in the air pockets behind our brows, noses, cheekbones, and in between our eyes and teeth
- Blackening of the infected skin region
- Excessive reddening and warmth
- Infection-related swelling

Symptoms of *gastrointestinal mucormycosis* -

- Vomiting and nausea
- Pain in the abdomen or stomach
- gastrointestinal bleeding

Who is at risk of Mucormycosis - Black Fungal Infection?

People who have certain diseases or medical conditions are more likely to acquire mucormycosis because they have lowered immunity as a result of their medical problems or take medications that suppress the immune system in order to battle germs and sickness.

Examples are:

- Coronaviruses and other forms of severe acute respiratory syndrome (SARS). Viral diseases include adenovirus infection, parainfluenza virus infection, flu (influenza), common cold, HIV/AIDS, herpes, human papillomavirus (HPV), chickenpox, respiratory syncytial virus infection, infectious mononucleosis, mumps, measles, and rubella, shingles, viral gastroenteritis (stomach flu), and viral hepatitis. viral meningitis and viral pneumonia.
- Immunodeficiency disorders and other diseases such as ataxia-telangiectasia, chediak-higashi syndrome, combined immunodeficiency disease, complement deficiencies, diGeorge syndrome, hypogammaglobulinemia, job syndrome, leukocyte adhesion defects, panhypogammaglobulinemia.
- Patients who have been taking steroids for COVID-19 treatment are more vulnerable since steroids impair the immune system. Patients who have had organ transplants, stem cell transplants, or are on immunosuppressive medicines are also at risk of black fungus infection.

What are the prevention and precautions for Mucormycosis?

Because fungal spores are spread in the environment, it is impossible to avoid breathing them. There is currently no vaccination to prevent mucormycosis, thus persons with compromised immune systems should take these precautions.

- Maintain personal hygiene by taking a thorough scrub bath on a regular basis.
- Avoid travelling to dusty areas or construction sites; if you can't avoid going to dusty areas, use a N95 mask.
- Avoid actions that will bring you into direct touch with dust or soil. If you are conducting any soil-related activity, use gloves and long shoes.
- To avoid having skin infection, clean the skin injuries with warm water and antiseptic solutions.
- If you have had a stem cell or organ transplant, consult your doctor about antifungal treatment to avoid mucormycosis or other fungal infections.

Mucormycosis testing and diagnosis

Based on the medical history, physical examination, symptoms, and infection locations, the doctor may recommend laboratory and imaging tests to detect mucormycosis. The following tests can aid in the diagnosis of fungal infection:

- A fluid sample from the respiratory system is tested in a laboratory.
- Biopsy tissue sample collecting
- Imaging studies - A CT scan of your sinuses, lungs, or other sections of your body, depending on the location of the suspected infection.

What are treatment options for Mucormycosis?

Mucormycosis can become fatal if not treated quickly. In cases where the infection is identified at an early sinus stage, most patients can completely recover from it.

- Antifungal medicines (Liposomal Amphotericin B, Posaconazole and Isavuconazole) are given through a vein or by mouth.
- Often requires surgery to cut the infected tissue or parts.
- Patients may require intravenous antifungal therapy for up to 28 to 42 days.

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Compiled By:

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Oxygen and Oxidation in Human Health and Aging

The beauty of chemistry in life can be found by oxygen and oxidation in human life. Oxygen is necessary for maintenance of human life by oxidation. And it is an essential part of life. Oxygen acts differently in different conditions. Most living things need oxygen to survive. Each and every cell in the living beings requires oxygen to function. The cellular respiration occurs in all body cells and utilizes oxygen to get energy from the food and the cell uses oxygen to break down sugar produces energy in all cells and releases carbon dioxide to survive. Oxygen binds to haemoglobin and is transported in the body. In the lung, the oxygen exchange takes place most effectively in the bottom part of lungs i.e. the alveoli. The red blood cells pick up oxygen from inhaled (breathed in) air and carry it through the bloodstream to all parts of the body. When they reach their goal, they release it again. Always, increased levels of oxygen helps to perform better and provide more energy to mind and body. The level of oxygen varies from person to person and effect from environmental factors. Therefore, deep breaths are important, they make sure that the oxygen exchanges and makes the blood more oxygenized. Optimal breathing is need of the day as a healthy adult needs 12-20 breaths per minute. Due to unawareness of optimal breathe, the breaths number decreased to 6-8 per minute.

There are number of ways to provide greater amounts of oxygen to cells.

- ☞ Exposing to fresh air
- ☞ Drinking appropriate water: This hydrates lungs and influences oxygen levels to increase.
- ☞ Eating iron containing foods: Iron percentage may increase in blood vessels, which transport the oxygen to each cell of the body. Great sources of iron-rich foods are jaggery, ground nut, fenugreek leaf, kale and broccoli, legumes, apple, egg and fish.
- ☞ Deep breath: In a day, few deep breaths are necessary and more efficient. They allow body to exchange entirely incoming oxygen with outgoing carbon dioxide. Deep breathing is also for slow downing the heartbeat, stabilizing blood pressure, increasing blood flow, increasing immunity, helps to get normal deep sleep and lowering the stress. For deep breathing, place should be selected comfortable to sit or lie down.

Adverse Effects of Lack of Oxygen

The deficiency of oxygen effects for the physical activities as well as brain function and experience tired and fatigue. The optimal oxygen level is required in the body to maintain cell energy and function appropriately. Low level of oxygen in blood and tissues leads to abnormal circulation and cause different types of symptoms such as headache, shortness of breath, uncertainty, giddiness, high blood pressure, chest pain, etc. This also weakens the immune system of the cells. Sometime the lack of oxygen or without oxygen a permanent brain damage begins after 4 minutes. For unconscious person time is important for not breathing.

Measurement of Oxygen level in blood

The determination of oxygen level in blood is carried out medically by SPO₂. This is known to measure for peripheral capillary oxygen saturation in blood. It is measured with pulse oximeter. The range between 94% and 99% is considered as normal SPO₂ level. If the oxygen level goes below 90% is considered as critical and can damage lung, heart and liver.

Oxidation

Oxidation is a chemical reaction process where loss of electrons from the atom or molecules and an oxidising agent gains electrons from the atom or molecules. It is a normal and necessary process which occurs in the body. Oxidation takes place in different conditions such as when cells utilizes glucose to produce energy, when immune system is inhibiting the action of microorganisms, when enzymes detoxify pollutants, pesticides and cigarette smoke in the body.

Oxidants are reactive molecules are produced both inside the body and in the environment which reacts with other cellular macromolecules in the body such as DNA, protein and lipids. After reacting with macromolecules, it damages molecules and results disease and inflammation. Why the statement is given for oxidation which takes life because biological oxidation is the ongoing aging progression of the body. One of the renowned oxidation reaction theories which state that oxygen reacts with the chemicals in the body and produces by-products called free radicals like reactive oxygen species and superoxide. A free radical is an oxygen molecule which loses an electron (single electron atoms are highly unstable and reactive) and it tries to neutralize by gaining an electron from other molecules present in the body. This process continuous until to get neutralize by antioxidants. Oxidation is good for health when functioning of oxidation and production of free radicals are balanced which fights off pathogens (leads to infections). The excess of oxidation leads to over production of free radicals and it is responsible for oxidative stress. Therefore, free radicals are responsible to damage the tissues and cause cancer, diabetes and other diseases as well. This can also cause age-associated reductions in physiologic functions due to oxidative damage of macromolecules which increase with age and this is directly related to life expectancy of individuals.

Prevention of oxidation

According to ancient Hinduism, saints survived up to 400 years. How it was possible for them is due to prevention of oxidation in the body. In Himalayas some medicinal trees available which inhibit the oxidation of molecules present in the body. Other than medicinal trees, there are few oxidation prevention methods which can be adopted in our daily life and can reduce oxidation, this may delay aging.

Step 1: Eat antioxidant containing fruits and vegetables

Step 2: Keep away from processed foods and sugar

Step 3: Provide time to reduce mental stress

Step 4: Stay away from infections

Step 5: Refrain from smoking

Step 6: Regular exercise

Many studies proved that due to oxidation of protein progresses in aging and development of some age-related diseases and several studies are reported in the intervention of malfunctions of organs and age-related diseases as well.

Ultimately oxygen is necessary for life, without oxidation, cells will not function. Oxygen gives life and oxidation takes life by proceeding towards aging. Simultaneously life formation by oxygen and degradation by oxidation takes place. This is the beauty of nature give and take.

Dr. Jaishree Vaijanathappa
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Nanotechnology and Nanomedicine –

RECENT SUCCESS, TRENDS AND FUTURE PERSPECTIVES

INTRODUCTION

Nanotechnology involves the study and applications of materials at the nano-scale (10^{-9}) and over the years, nanotechnology-based research and development has rapidly increased. It can be best described as an inter-disciplinary science comprising of biology, interface-chemistry and material science. The tremendous progress achieved in the fields of science and technology has hugely contributed to the growth of nanotechnology. Today, the applications of nanotechnology transcend across the boundaries beginning with medicine, pharmacy and healthcare to cosmetics, capacitors and fuel-cells.

Infections and diseases have caused a massive burden to the global health scenario and the emergence of novel infections in recent years such as the COVID-19 pandemic has only aggravated the problem. Despite the commendable progress made in the field of pharmaceutical sciences, the critical need for newer and more effective therapies and diagnostics still exists. Increasing rates of multi-drug resistance along with the adverse effects due to the prolonged use of medicines is another major concern. Innovation in the field of pharmaceutical sciences is the need-of-the-hour and this brings into the picture, the promise and potential of nanotechnology.

NANOTECHNOLOGY AND NANOMEDICINE

Nanotechnology offers a cutting-edge platform for the development of novel compounds, drug carriers and formulations with enhanced biomedical applications. Nanomedicine refers to the applications of nano-scale materials to achieve innovation in the field of medicine and pharmacy. Nano-based systems are comparable in size with biomolecules and hence, their interactions can be tailor-made to suit clinical applications. Due to their inherent nano-dimensions, nanomaterials offer unique properties and characteristics, which are completely absent at the bulk matter. The implications of the nano-dimension can be exploited in the way of new formulations and drug delivery systems.

The outstanding features of nano-based materials arises from two main factors, the multi-fold increase in the surface-area of nanomaterials and their tuneable chemical, charge, size and surface properties. The all-important pharmaceutical parameters such as sustained-release, increased bioavailability, lower toxicity profiles, lower dosage forms and the ultimate aspect of drug delivery through site-specific drug conjugates can be realized through nanotechnology. Furthermore, their bio-compatibility can be improved and even the anatomically reserved sites such as the blood-brain-barrier can be accessed. The most popular and well-explored nanomaterials are polymeric and metal nanoparticles, micelles and dendrimers, nano-drug delivery vesicles, liposomes and lipid-based nanoparticles.

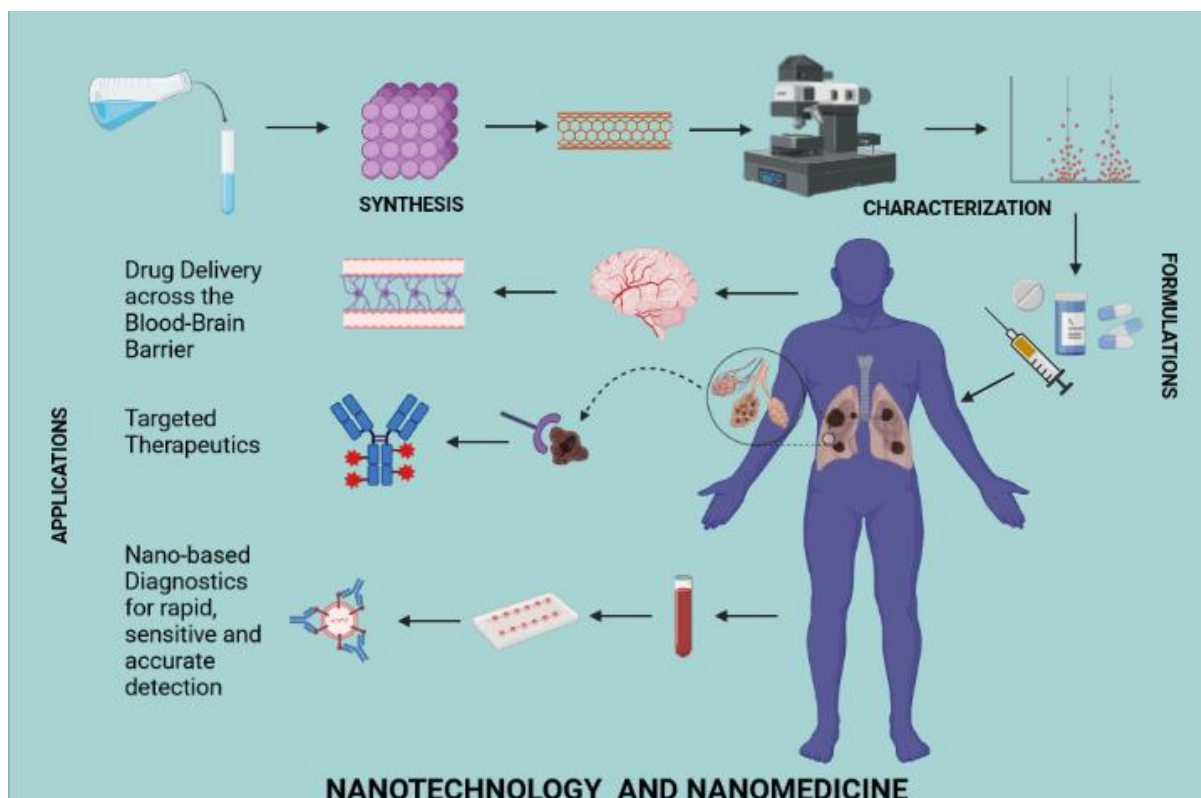


Figure 1: Nanotechnology and Nanomedicine

NOVEL DRUG DELIVERY SYSTEMS

The design and synthesis of nanotechnology-based novel drug delivery systems can help in the regulation of the pharmacokinetic and pharmacodynamic profile of a drug. Surface-functionalization of nanomaterials through specific chemical groups as probes for targeting particular sites and receptors is currently possible. This aspect is highly beneficial in the case of cancers, where the distinction between normal tissue and a tumour is needed. The development of thermo-sensitive and pH-sensitive polymers have improved the overall targeting potential. Efficacy at the terminal site of action, especially across the anatomically reserved areas can be easily accessed and treated through nanotechnology-based novel drug delivery systems. Dose-related toxicities and adverse effects of many therapeutic agents may prove to be a hindrance in the effective management of clinical diseases. Nano-particulate drug delivery systems have markedly improved permeability characteristics along with increased intracellular drug accumulation and hence, lower doses with reduced side-effects are possible through nano-based approaches. Importantly, reduced toxicity profile of drugs can be achieved while retaining the therapeutic efficacy.

RECENT SUCCESS, TRENDS AND FUTURE PERSPECTIVES

Over the last three decades, around 50 nano-based pharmaceutical drugs have gained FDA approval and are marketed commercially. Also, more than 70 nano-pharmaceuticals are undergoing clinical trials, with many of them initiated in 2014 or later. There has been a gradual rise in the number of nano-drugs that have received investigational new drug (IND) approval from the FDA to undergo clinical trials since 2007. The years from 2013 to 2015 had the highest number of nano-formulations entering clinical trials and this suggests an increase in the availability of FDA-approved nano-drugs in the future.

Researchers and academicians are now shifting their focus from simple nanoparticles to more evolved and complex systems. With progression of newer research and knowledge gained from the complex interactions between host-organ systems and nanomaterials, the future of more innovative nanotechnology based pharmaceutical products being developed and gaining regulatory agencies' approval also increases. The promise of personalized medicine can be realized through such nano-based multivalent therapeutic interventions and the ever-elusive cure for many complex and rare diseases can also be found. However, for wider applications and usage of nanotechnology in the pharmaceutical industry, further research involving *in-vivo* studies and clinical trials are needed to understand their toxicity and validate the long-term benefits. The translational potential of nanotherapeutics will continue to grow and may prove to be a game-changer for academics, researchers, clinicians and the overall pharmaceutical industry at large.

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What Can (and Cannot) Black Cohosh Do for Menopause Symptoms

Is this herbal supplement effective at reducing hot flashes?

If menopause gets you feeling hot and irritated, you may have heard that black cohosh can help alleviate hot flashes symptoms. Although this herbal medicine has been utilized since ancient times, it has only recently gained recognition as a viable treatment for this widespread and unpleasant menopause symptom.

What is black cohosh?

Black cohosh (scientifically known as *actaea racemosa* or *cimicifuga racemosa*) is a blooming perennial plant that grows up to 5 feet tall with fragrant white blossoms on a stem. It is a member of the buttercup family and grows in the eastern United States and Canada's forests. Additionally, black cohosh is known by various names,

- Black bugbane.
- Black snakeroot.
- Fairy candle.
- Macrotys.
- Rattleweed.
- Rheumatism weed.



Yufang Lin, MD, an integrative medicine specialist, discusses what black cohosh is, how it is utilized, and what it can — and cannot — do for menopause.

Benefits of black cohosh

According to studies, black cohosh binds to the body's opioid receptors, conferring a numbing effect. It is occasionally used today to alleviate muscle aches and pains associated with menopause, perimenopause, and postmenopause.

While it may appear to be a recent trend in wellness circles, it has really been used by medical practitioners worldwide since ancient times.

"While black cohosh has been promoted as a cure for hot flashes in recent years, this is not how it has traditionally been used," Dr. Lin explains. "Black cohosh has been used for centuries in both traditional Chinese medicine and Western herbal tradition to alleviate pain and calm the nervous system."

Black cohosh has been used in traditional Chinese medicine to:

- Reduce musculoskeletal pain and spasms.
- Support liver function.

- Support the nervous system.
- Tonify the kidney and uterus.

Western herbal tradition uses black cohosh in similar ways, specifically to reduce pain associated with:

- Arthritis and muscle problems.
- Menstruation, including cramps.
- Nervous spasms and related pain.
- Symptoms of premenstrual syndrome (PMS), including headaches and body aches.

Indigenous peoples of North America have also utilized black cohosh for centuries to ease the discomfort associated with menstruation, childbirth, and menopause symptoms. Additionally, some clinicians began utilizing black cohosh in the twentieth century to treat discomfort related with gynecological diseases.

Taking black cohosh for hot flashes

Today, black cohosh's roots and underground stems are processed into herbal supplements — capsules, powders, and teas — and advertised as a way to alleviate hot flashes.

Hot flashes, which are caused in part by oestrogen deficiency, are the most prevalent symptom of menopause, affecting up to 80% of women. Symptoms range in severity from mild to severe and include the following:

- Anxiety.
- Feeling hot.
- Palpitations.
- Profuse sweating.

However, does black cohosh truly aid in the elimination of hot flashes? The researchers remain unconvinced. "While the use of black cohosh for hot flashes is relatively new in the twentieth century, the evidence in general does not support this use," Dr. Lin explains.

One of the phytochemicals in black cohosh has a serotonin-like action, which may have an influence on the body's ability to regulate temperature, hence reducing hot flashes – but this is not certain. "Not all black cohosh plants express the enzyme essential for the production of this phytochemical," Dr. Lin explains.

Black cohosh for other symptoms of menopause

Hot flashes aren't the only unpleasant aspect of menopause and perimenopause — but the good news is that black cohosh may help reduce some of those other symptoms, including:

- Depressed mood.
- Fatigue.
- Increased body pain.

“Black cohosh is an excellent herb to support people experiencing menopausal symptoms to reduce pain, reduce fatigue and lift your mood — just not consistently for hot flashes,” Dr. Lin says.

Is black cohosh safe to use?

“Black cohosh is generally safe when taken appropriately, but there are some people who should avoid it or use it very carefully,” Dr. Lin says.

Side effects of black cohosh are uncommon but may include:

- Breast pain or enlargement.
- Cramping.
- Headache.
- Mild weight gain.
- Muscle pain.
- Rash.
- Upset stomach.
- Vaginal spotting.

People who are pregnant or breastfeeding also should not use black cohosh due to its impact on the hormones.

How to take black cohosh

The standard black cohosh dosage is 40 mg to 128 mg of extract daily for up to 12 months. “The most common preparations are tinctures and capsules, but motivated individuals can make their own,” Dr. Lin says. To brew it at home:

- Simmer 1 cup of water with ½ to 1 teaspoon of dried black cohosh root.
- Keep on stove top for 10-15 minutes.
- Strain and drink up to 3 cups per day.

Dr. Lin suggests obtaining organic black cohosh exclusively from trustworthy companies that have been independently confirmed by a third party such as Consumer Lab, the United States Pharmacopeia, or NSF International.

References:

- <https://health.clevelandclinic.org/what-is-black-cohosh/>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2915573/>

Compiled By:

Ms. Lutfiya Molabaccus, 2nd Year, B Pharm Student, JSSAHERM

Diabetes Insipidus

Diabetes insipidus is an uncommon disorder in which the body produces copious quantities of "insipid" urine, that is, uncoloured and odourless urine. Contrary to its name, diabetes insipidus is not correlated to diabetes mellitus (commonly known as diabetes) except for a few identical symptoms, which are feeling intense thirst and excreting a large amount of urine (anywhere from 3 to 20 litres a day). Diabetes insipidus only occurs in about 1 in 25000 people, mostly in adults but it can also affect women during pregnancy, known as gestational diabetes insipidus.

This condition is the result of a defect in the body in either responding to or producing vasopressin (AVP). **Vasopressin** is a hormone also known as **antidiuretic hormone** (ADH). AVP is made by the hypothalamus in the brain and is later stored in the pituitary gland. The role of vasopressin is to control the fluid level in the body by reabsorption of water in the kidney tubules.

In normal circumstances, little vasopressin is released by the pituitary gland when there is sufficient water in the body, leading to the kidneys excreting clear and dilute urine. On the other hand, is slightly parched causes more vasopressin to be released and consequently, more water is retained by the body. In this case, the urine excreted is less diluted.

A person suffering from diabetes insipidus either lacks the hormone vasopressin in his body (central diabetes insipidus) or does not respond appropriately to it (nephrogenic diabetes insipidus). However, both types exhibit similar symptoms. Some of the **symptoms** are:

- dehydration,
- polyuria (excreting more than three litres of urine daily),
- polydipsia (severe thirst),
- weakness,
- muscle pain and
- irritability.

The **causes of central diabetes insipidus** can be:

- a tumour,
- aneurysm (bulging in the wall of a blood vessel),
- infection,
- surgery,
- inflammation,
- trauma to the head or diseases such as Langerhans cell histiocytosis.

By contrast, **nephrogenic diabetes insipidus** can arise from medications such as lithium metal, damage to the kidneys, substantial amounts of calcium in the blood or decreased amount of potassium in the bloodstream.

Diagnosis

Both types of this condition can be diagnosed by performing a urinalysis to check the concentration of the urine being excreted. In addition, the patient's blood sample can be assessed for the level of electrolytes in the blood. Alternatively, an MRI of the patient's internal organs may be recommended to check for this disorder.

Treatment

On a general level, diabetes insipidus can be partially treated by having a large daily intake of water. Each type of the disorder has specific remedies; central diabetes insipidus would require medications like vasopressin or desmopressin to be treated. Meanwhile, nephrogenic diabetes insipidus is slightly more challenging to treat. Drugs taken in this case would only help in reducing the symptoms. Indomethacin and diuretics such as amiloride can be taken for this purpose.

References:

- Diabetes Insipidus (DI): Symptoms, Causes, Diagnosis, Treatment (webmd.com)
- Diabetes insipidus - NHS (www.nhs.uk)

Compiled By:

Ms. Salvi Wahidna, 1st Year, B Pharm Student, JSSAHERM

FDA Approved Drugs

S.N	Drug	Indication	Date of Approval
1	Comirnaty (COVID-19 Vaccine, mRNA) Injection	Prevention of COVID-19	23/07/21
2	Korsuva (difelikefalin) Injection	Treatment for chronic kidney disease-Associated Pruritus	23/07/21
3	Skytrofa (lonapegsomatropin-tcgd) for Injection	Treatment for Pediatric Growth Hormone Deficiency	25/07/21
4	Invega Hafyera (Paliperidone palmitate) Extended-Release Injectable Suspension	Treatment for schizophrenia	30/07/21
5	Trudhesa (Dihydroergotamine mesylate) Nasal Spray	Treatment for migraine	02/09/21
6	Exkivity (mobocertinib) Capsules	Treatment for non-small cell lung cancer	15/09/21
7	Tivdak Lyophilized Powder for Injection	Treatment for cervical cancer	20/09/21
8	Opzelura (ruxolitinib) Cream	Treatment for atopic dermatitis	21/09/21
9	Qulipta (atogepant) Tablets	Treatment for migraine prevention	28/09/21
10	Zimhi (Naloxone hydrochloride) Injection	Treatment for opioid overdose	15/10/21
11	Seglentis (celecoxib and tramadol hydrochloride) Tablets	Treatment for pain	15/10/21
12	Tyrvaya (varenicline) Nasal	Treatment for dry eye disease	15/10/21
13	Scemblix (asciminib) Tablets Spray	Treatment for: chronic myelogenous leukemia	29/10/21
14	Vuity (Pilocarpine hydrochloride) Ophthalmic Solution	Treatment for presbyopia	28/10/21
15	Eprontia (topiramate) Oral Solution	Treatment of epilepsy and the preventive treatment of migraine	05/11/21
16	Besremi (ropeginterferon alfa-2b-njft) Injection	Treatment for polycythemia vera	12/11/21

Events' Corner

Event 1: Visit to Wellkin Hospital, Mauritius

Wellkin is the largest and most modern private healthcare hospital in Mauritius. Since its foundation, it has changed the landscape of private healthcare delivery by bringing the latest technologies and pioneering treatments to the region, benefiting both local and international patients.

The discussion was held on 10th September 2021 with team from JSSAHER and Wellkin on way forward for offering clinical pharmacy services to Wellkin hospital.

Dr Khayati Moudgil from JSSAHERM visited the hospital on 16th September to meet the leadership from Wellkin and carried the ward rounds to understand the requirements of the hospital.

The fruitful discussion was held with Dr Dipak Singh, Medical Officer of Wellkin and it was discussed to establish the clinical pharmacy department one year down the line in collaboration with JSSAHERM. It will be beneficial to both Academy and Hospital as well. The students from JSSAHERM will be posted for their training to the hospital.

The clinical and inpatient pharmacy services planed are;

- Pre-rounds, Professor / Chief rounds, and Post-rounds
- Drug Information
- Poison Information
- Treatment Chart Review
- Medication Incidents
- Pharmacist Interventions
- Adverse Drug Reactions
- Adverse Events Following Immunization (AEFI)
- Patient Counseling
- Patient Referrals



Event 2: Orientation Week B Pharm Freshers': 21 – 25 September 2021

The School of Pharmacy welcomed its 2nd Cohort of the students and organized the orientation week with various activities like campus visit, guest and motivational lectures, program and library orientation, JSSAHERM E-learn portal, fire safety training, icebreaking sessions with seniors etc.

Glimpse of the sessions are given below;

Second Cohort of B Pharm at School of Pharmacy, JSSAHERM started from 21th September 2021

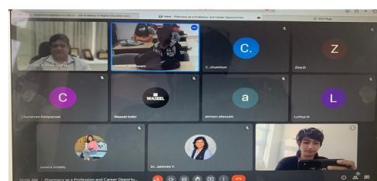
Orientation Week for Freshers of B Pharm 21 – 25 September, 2021

AGENDA

Day 1: Tuesday, 21 Sep, 2021		Venue: G1 class room	Day 4: Friday, 24 Sep, 2021	
10:00 AM	Welcome and overview of administrative and student services	Mr K P Naveen, Registrar	10:00 AM	Pharmacy as a Profession and Career Opportunities (Virtual Guest Lectures)
10:30 AM	About JSSAHER, Mauritius and Transition from School to College	Dr Praveen Mohadeb, CEO		Dr Vishal Kumar Gupta, Dy. Director (Academics), JSSAHER, Mysuru Dean, School of Pharmacy, JSSAERM
11:00 AM	Campus Visit and Library Orientation	Dr Khayati Moudgil and Ms. Suparna	11:00 AM	Briefing on JSSAHER E-learn Platform
12:00 Noon	Lunch Break	-		Mr KP Naveen, Registrar
01:00 PM	Introduction and Icebreaking session with III semester students	Prof. (Dr) Jaishree Vajjanathappa and Dr Khayati Moudgil	01:30 PM	Safety & Health visit and Fire Safety Training & Fire drill
				Health and fire safety Department
			05:30 PM	Clinical Pharmacy/Pharmacist: The Future of Patient Care (Virtual Guest Lectures)
				Dr Mohammed Numanuddin Executive Clinical Pharmacologist Breach Candy Hospital Trust, Mumbai, India
Day 2: Wednesday, 22 Sep, 2021				
10:30 AM	About the School of Pharmacy and Program Orientation	Prof. (Dr) Ashish Wadhvani		
Day 3: Thursday, 23 Sep, 2021			Day 5: Saturday, 25 Sep, 2021	
10:00 AM	Guest Lecture: "Believe in Yourself"	Mr Rughooputh Phrmeshroy Charan, Director Bambous Pharmacy Ltd	09:00 AM to 03:00 PM	Participation in Blood Donation Camp
11:00 AM	Blood Donation Camp Briefing – Importance of Blood Donation	Mr Tilakdhari, Director, Blood Donors Association, Mauritius & Dr Khayati Moudgil and Team		



Mr Rughooputh Phrmeshroy Charan – Believe in yourself



Dr Vishal Kumar Gupta – Pharmacy Profession and Career Opportunities in Pharmacy



Fire Safety Drill



Mr Tilakdhari – Importance of Blood Donation



Dr Numan – Clinical Pharmacy: Future of Patient Care



Event 3: Virtual Guest Lecture

Topic: Clinical Pharmacy/Pharmacist: The Future of Patient Care

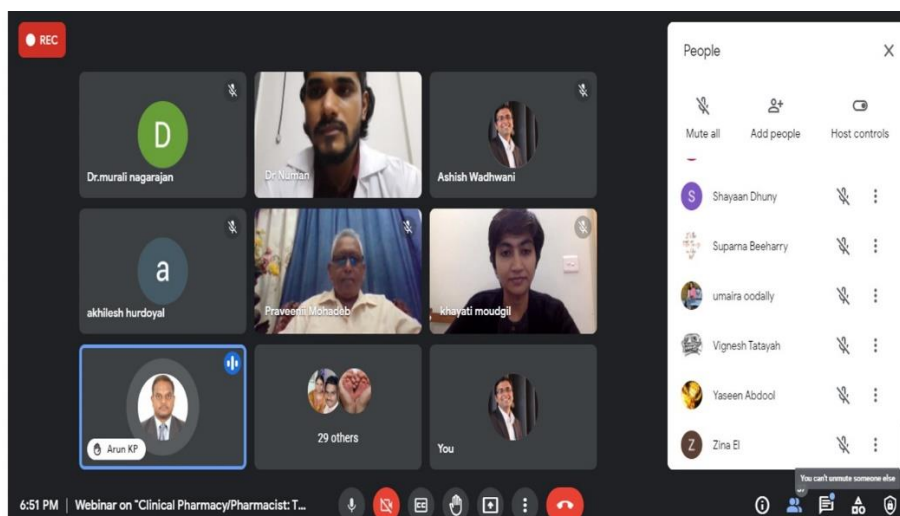
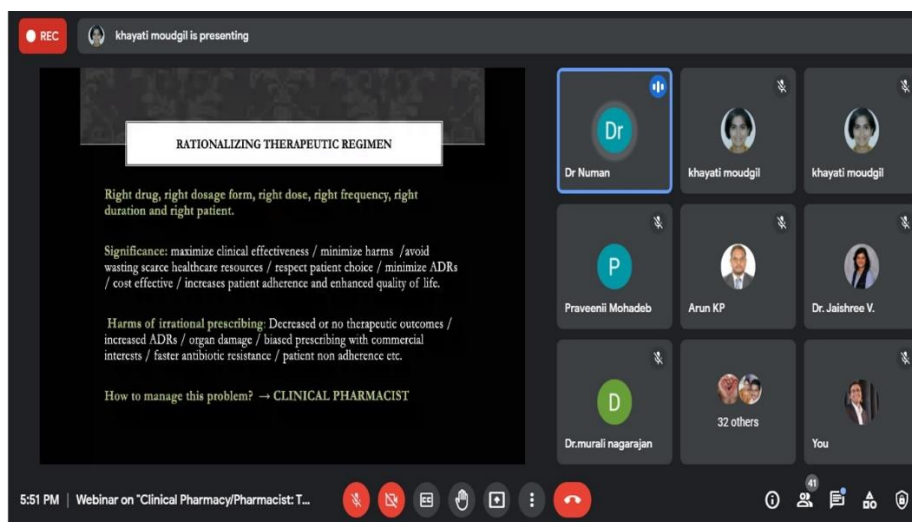
The guest lecture was organized by the School of Pharmacy for the benefit of the students and working Pharmacists of Mauritius on the topic “Clinical Pharmacy/Pharmacist: The Future of Patient Care.” The session was very well received by the students and Pharmacists on different types of Pharmacist based on a Practice setting and roles, responsibilities of Clinical Pharmacist in Patient Care. The session was conducted via Google meet on 24th September 2021 on the occasion of World Pharmacist Day.

Dr. Mohammad Numanuddin, executive Clinical Pharmacologist, Breach Candy Hospital Trust, Mumbai, India was the speaker of the webinar.

Dr Khayati Moudgil welcomed the speaker and briefed about the importance of Clinical Pharmacy in today's world. The participants thoroughly enjoyed and interacted well with the speaker.

Dr Ashish Wadhvani and Dr. Jaishree Vaijanathappa thanked the speaker for his time in engaging the students and giving them insights into Clinical Pharmacy.

A glimpse of the session;



Event 4: Blood Donation Camp

A Blood Donation Camp was organized by **School of Pharmacy, JSS Academy of Higher Education and Research, Mauritius** with Blood Donors Association, on the occasion of **World Pharmacist Day** on September, 25, 2021 at JSS Academy Vacoas. The camp began at 9:00 A.M.

CEO Dr. Praveen Mohadeb encouraged all the donors and thanked them for the Noble steps they have taken and to help the Country for having any blood shortage. Blood cannot be manufactured - it only comes from generous donors to save the society and mankind, we should come forward for this Noble cause. It is a way of JSS Academy of Higher Education and Research, School of Pharmacy gesture in bringing a ray of hope to alleviate the serious problems of acute shortage of blood. Blood donation can save lives of innumerable persons. Donation of blood is very critical and crucial for saving lives many patients and those who have met with accidents. It is as such a great service or contribution to the society and people living in it. Blood Donors Association was happy with the collection. To ensure the safety of both patients and donors, these are some of the requirements donors must meet to be eligible to donate blood based on their donation type.

Whole Blood Donation:

- Donation frequency: Every 56 days
- You must be in good health and feeling well
- You must be at least 16 years old in most states
- You must weigh at least 110 lbs



Event 5: Oral Presentation by Mrs. Manisha Parsad

Mrs Manisha Parsad, Assistant Professor made an oral presentation on Molnupiravir, the new drug marketed for SARS COV 2 infection, its mode of action and the chemistry at l'Aventure du Sucre, Mauritius on 09 October 2021.

The British Council and its partners organised the Famelab Science Communication Competition National Final 2021.

Mrs Manisha Parsad was selected out of 20 participants for the nine finalists.



Event 6: Kannada Rajyotsava Celebrations 2021

With the divine blessings of His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji, the Kannada Rajyotsava 2021 was celebrated on 1st November 2021 at JSS Academy of Higher Education and Research, Mauritius (JSSAHERM). The High Commissioner of India to Mauritius, H.E. Mrs. K. Nandini Singla, was the chief guest for the event. Also in attendance were Miss Swetha Moortu, Secretary to High Commissioner of India, Dr Praveen Mohadeb, CEO, JSSAHERM and parents of H.E. Mrs. K. Nandini Singla.

H.E. Mrs. K. Nandini Singla paid respect to His Holiness Jagadguru Dr. Sri Shivarathri Rajendra Mahaswamiji and did a campus tour accompanied by Dr Praveen Mohadeb, CEO, JSSAHERM, Mr. Naveen K P, Registrar, JSSAHERM and members of the academic staff. H.E. Mrs. K. Nandini Singla was quite impressed with the campus and the academic and infrastructural facilities at JSS Mauritius.

The Kannada Rajyotsava event began by hoisting the state flag followed by a state song (Naada Geete) in the garden. Guests then moved to the lecture hall where the lighting of traditional lamp was performed.

The address of H.E. Mrs. K. Nandini Singla to the audience was highly appreciated as she is originally from the State of Karnataka, India and included some anecdotes from her past in Karnataka. She also mentioned that it was the first time during her career as a Diplomat that she has witness the celebration of Kannada Rajyotsava in a foreign land.

After the cultural programmes were performed, all the guests had a traditional South Indian lunch organised in the cafeteria. Before leaving, H.E. Mrs. K. Nandini Singla assured to support the activities of the JSS Mauritius.



Welcoming the Chief Guest



Chief Guest and her parents paid respect to His Holiness



Campus Tour of the Chief Guest



Presenting memento to the Chief Guest by CEO

Event 7: Virtual Guest Lecture

Topic: Nervous System-Complex Network of Nerves and Neurons

The guest lecture was organized by the School of Pharmacy for the benefit of the students on the topic “Nervous System-Complex Network of Nerves and Neurons”. The session was conducted via Google meet on 15th November 2021. The session was very well received by the students

Dr Ashna Chackochan, PharmD, Assistant Professor, Department of Pharmacology, Sanjivani College of Pharmaceutical Education and Research, Kopargaoan, Maharashtra, India was the speaker of the guest lecture.

Dr Khayati Moudgil welcomed the speaker and briefed about her biography to the students. The participants thoroughly enjoyed and interacted well with the speaker.

A glimpse of the session;

The screenshot shows a Google Meet interface. At the top, it says "Ashna Chackochan is presenting". The main content is a presentation slide with the following table:

Cranial nerve	Composition	Origin	Function
Vestibulocochlear (VIII) nerve	Sensory	Ear (Semicircular canal & Spiral organ)	Equilibrium and Hearing
Glossopharyngeal (IX) nerve	Mixed	Taste buds Proprioceptors Carotid Sinus Carotid arteries Modulla Oblongata	Sensory function: Taste and somatic sensations from posterior third of tongue; proprioception in swallowing muscles; monitoring of blood pressure; regulation of breathing rate and depth. Somatic motor function: Elevates the pharynx during swallowing and speech. Autonomic motor function: Stimulates secretion of saliva.
Vagus (X) nerve	Mixed	Taste buds Proprioceptors Arch of aorta Most organs of Thoracic and Abdomen Modulla Oblongata	Sensory function: Taste and somatic sensations from posterior third of tongue; proprioception in swallowing muscles; monitoring of blood pressure; regulation of breathing rate and depth. Sensations in thorax and abdomen. Motor function: Swallowing, coughing, and voice production
Accessory (XI) nerve	Motor	C1-C5 segments of the spinal cord	Mediates movement of head and pectoral girdle.
Hypoglossal (XII) nerve			Movement of tongue during speech and swallowing

Below the slide, there are several video thumbnails of participants: Ashna Chackochan, Zeenaat Bhat..., TAN WEE SOP..., Rohan Matad..., Madoo Vasish, 12 others, and You. The bottom of the screen shows the meeting controls and a timestamp of 9:45 AM.

The screenshot shows a grid of participants in a Google Meet session. The participants are arranged in a grid, with some showing video thumbnails and others showing profile pictures or initials. The participants include: Ashna Chackochan (Presentation), Ashna Chackochan, khayati moudgil, TAN WEE SOPHIA ANGELI, Rohan Matad..., Madoo Vasish, Salvi Wahidna, NUBHEEBUCUS HAIMAN, Zeenaat Bhatoo, Pravir Henrage, Vignesh Tatayya, Muhammad Shuaib, Yaseen Abdool, Madiliah Mahmoodally, and You. The bottom of the screen shows the meeting controls and a timestamp of 9:45 AM.

Event 8: Virtual Guest Lecture

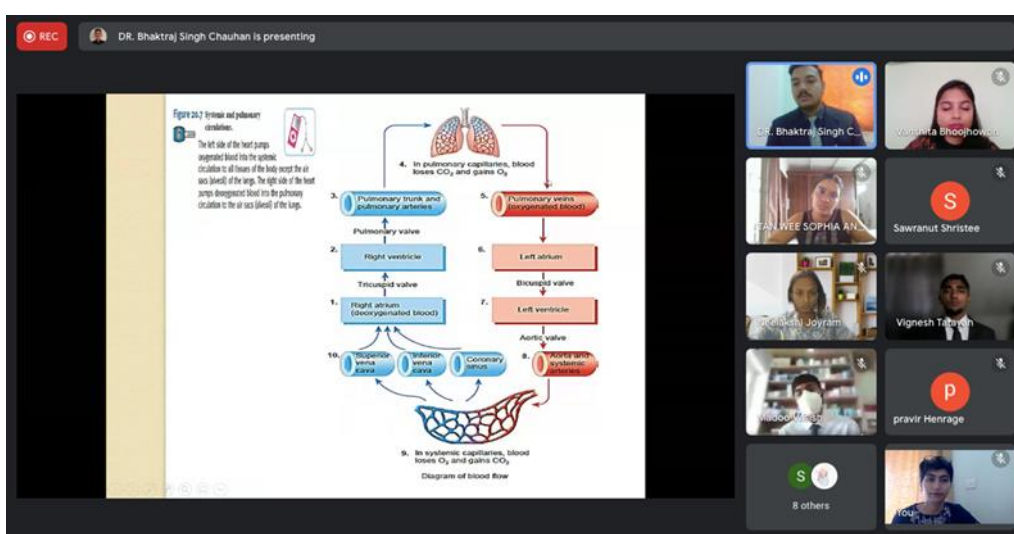
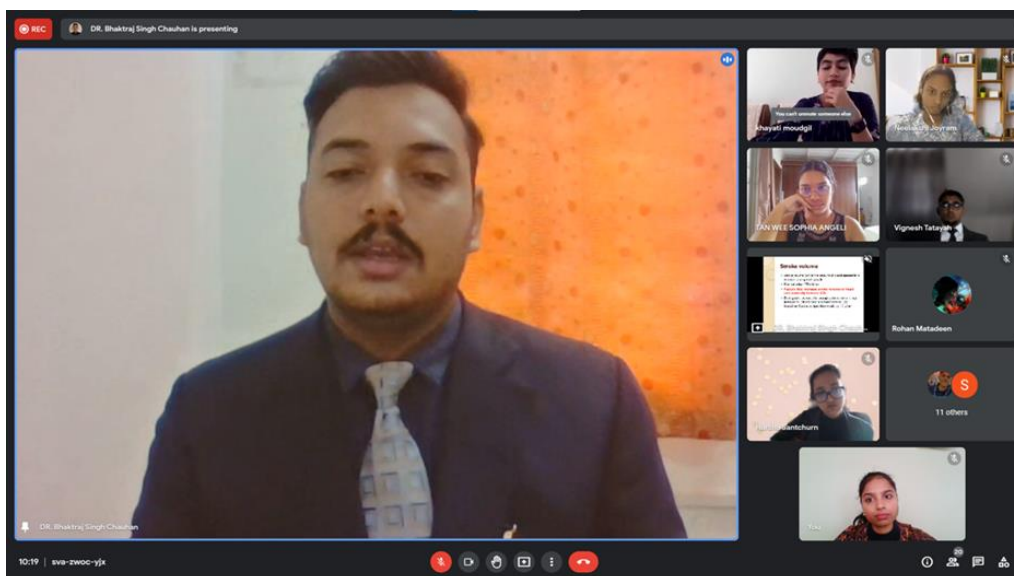
Topic: Know your Heart- A Cardiac System

The guest lecture was organized by the School of Pharmacy for the benefit of the students on the topic “Know your Heart- A cardiac system” The session was very well received by the students. The session was conducted via Google meet on 23rd November 2021.

Dr Bhaktraj Singh Chauhan, BPharm, PharmD, Clinical Pharmacologist and Assistant Professor, Department of Clinical Pharmacy, Geetanjali Hopsital, Udaipur, India was the speaker of the guest lecture.

Dr Khayati Moudgil welcomed the speaker and briefed about his biography to the students. The participants thoroughly enjoyed the session on ECG interpretation, Anatomy of Heart, Blood circulation, Cardiac cycle and interacted well with the speaker.

A glimpse of the session;



Memorandums of Understanding / Agreement

JSSAHER, Mauritius and Anna Medical College, Mauritius

JSS Academy of Higher Education and Research, Mauritius and Anna Medical College, Mauritius signed Memorandum of Understanding on 05th November 2021.

It is the intention of parties here, Academic Institution and Host Institution to cooperate and promote collaboration to enhance capabilities of health professionals in Mauritius and in the region through;

- ❖ New opportunities for collaborative teaching in pharmacy and biomedical science programs
- ❖ Staff and student exchange programs
- ❖ Collaborative research projects, publications and patents
- ❖ Joint awareness camps etc.

B Pharm Program of JSSAHERM Granted Precertification by ACPE

B Pharm Program of JSSAHER, Mauritius is granted Precertification by Accreditation Council for Pharmacy Education (ACPE), USA

The Bachelor of Pharmacy (B Pharm) Program offered by the JSS Academy of Higher Education & Research, Mauritius (JSSAHERM) at the School of Pharmacy is granted Precertification by the Accreditation Council for Pharmacy Education (ACPE), USA. JSSAHERM was the first Institution to receive the ACPE Precertification outside of USA and 1st in the African region. The board of directors of ACPE at its meeting held on July 29 – August 1 2020 made its decision to grant Precertification to the B Pharm program offered at JSSAHERM following the ACPE team visit to JSSAHERM from 10 March 2020 to 12 March 2020. During the review process, Board of Directors of ACPE appreciated the efforts of JSSAHERM in delivery of curriculum, simulation and advanced learning experiences provided, enhanced traditional and e-learning resources and infrastructure facilities provided to the students.

ACPE is recognized by the US Department of Education as the national agency for the accreditation of professional degree programs in pharmacy. The International Certification of ACPE, USA provides bench marking of the education with that of US standards and other Pharmacy programs internationally and that provides global recognition and opportunities to the students graduating from ACPE certified B Pharm program.

It is also noteworthy to mention that Dr B Suresh, former Vice Chancellor of JSS Academy of Higher Education & Research, Mysore and the President of Pharmacy Council of India continues to guide and inspire the pharmacy program at JSSAHER, Mauritius in the capacity of Pro-Chancellor of JSSAHER, Mysore.

The inspirational guidance given by His Holiness Sri Shivarathri Deshikendra Mahaswamiji, the Hon'ble Chancellor of the Deemed to be University, the good governance support given by Dr C G Betsurmath, Executive Secretary, JSS Mahavidyapeetha and the leadership by Dr Praveen Mohadeb, CEO, Mr Naveen K P, Registrar, Dr Vishal Kumar Gupta, Dean, the institution has achieved this international recognition.

ACPE team conducted Precertification Focused Visit (Virtual) from 27 September 2021 to 30 September 2021 for evaluation of the Bachelor of Pharmacy Program of the School of Pharmacy, JSSAHERM, for consideration of affirmation of Precertification status.

ACPE Team thank the JSSAHERM for facilitating a successful evaluation team visit and for kind hospitality and cooperation that was extended to the members of the evaluation team during the evaluation visit. Next time, they hope that the visit can be on-site in Mauritius.

JSSAHERM Faculty Publications (September to December 2021)

1. Sai Akilesh M., **Ashish Wadhvani***, Manas Mandal Role of nanotechnology in HIV diagnosis and prognosis, *Frontiers in Clinical Drug Research – HIV*. 2021 (5);140-174
2. Sai Akilesh M., Rajesh J., Dhanabal SP., **Ashish Wadhvani***, Repositioning of Drugs to Counter COVID-19 Pandemic – An Insight, *Current Pharmaceutical Biotechnology*, 2021, 22 (2); 192-199 (**IF:2.10**)
3. Shyam Sundar P, Podila Naresh, Jawahar Natarajan, **Ashish Wadhvani***, Selvaraj Jubie, Potential Coumarin Thiosemicarbazone Hybrids as BRCA-1 Mimetics for ER Positive Breast Cancer Therapy: An In-silico Approach *Journal of medical pharmaceutical and allied sciences*, 10 (4); 3484-3493
4. Mohd Nasarudin Watroly, Mahendran Sekar, **Jaishree Vaijanathappa**, et. al., Chemistry, Biosynthesis, Physicochemical and Biological Properties of Rubiadin: A promising Natural Anthraquinone for New Drug Discovery and Development, *Drug Design, development and Therapy* 2021:12 4527-4549

International Pre-certification for B Pharm Program



Accreditation Council for
Pharmacy Education
(ACPE), USA

Grants

**International Precertification
for B.Pharm Program**

(Bachelor of Pharmacy - 4 Years Program)





Wishing You all a Merry X-Mas and a Happy and Prosperous New Year 2022!!!

For Clarifications/Feedback, Write

To:

The Chief Editor

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