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 II

May-August 2021

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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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Inside this Issue

A soft copy of this Newsletter is available under section *'Publications'* on our website https://jssaher.edu.mu/publication/

Pro Chancellor
JSS Academy of Higher Education & Research, Mysuru

President
Pharmacy Council of India

It is a matter of pride that JSS Academy of Higher Education and Research, Mauritius is bringing out its second issue of Newsletter 'JSSAHER Health and Education'

I understand that the newsletter is going to cover general information related to health/pharma, the latest happenings in the world of science, scientific articles of students and staff members on health and life sciences, invited articles, drug-related information, and event corner of the institute.

As we know that the world is going through the Covid-19 pandemic and we believe that the health care sector must be strengthened to counter this pandemic. The key role will be played by the health-based institutions in training the students and health care professions in various capacities and inculcate the creative and innovative potential of our young people through research and development activities.

This newsletter comes at the right time and is going to enlighten the students, general public, and health care professions on the contribution of science to society and help the individuals to lead the quality of life.

I am sure and confident that the JSS Academy of Higher Education and Research, Mauritius will have an impact in the society in the form of quality education & research-based outcome and evolve as the destination of choice for higher education and training in Mauritius for Mauritians and for citizens of the developing countries of the Indian Ocean and the African region.

I extend my greetings and congratulate the leadership, staff, and students of JSSAHERM for the successful release of the newsletter "Health & Education" and all other activities for the benefit of science and ultimately the society.

Dr B Suresh

COVID-19 and its impact on Education

From the Desk of Chief Editor:

The COVID-19 epidemic is first and foremost a public health emergency. Multiple governments have decided to close schools, colleges, and universities (appropriately). The situation demonstrates the dilemma faced by authorities when deciding whether to close schools (thereby reducing interaction and potentially saving lives) or to keep them open (allowing workers to work and maintaining the economy). Residents worldwide are facing significant short-term disruption as a result of homeschooling: it has a tremendous influence on not only parents' productivity, but also on children's social lives and educational development. COVID-19 has had a significant impact on children's mental health. Children can be exposed to a multitude of threats during lockdowns. Numerous concerns linked to confinement measures are likely to exacerbate family tensions, increase caregiver stress, foster economic instability, result in job loss or disruption, and result in social isolation. These are well-documented risk factors for intimate partner violence. The primary difficulties are identified as a poor internet connection, a lack of parental assistance, a lack of appropriate resources such as books, and parents' willingness to spend additional money on e-learning tools. Education is shifting online on an unprecedented and untested scale in order to comprehend. Additionally, as student tests go online, this results in significant trial and error and uncertainty for everyone. Certain assessments have been completely canceled. Notably, these disruptions will not be transient; they will almost certainly have long-term consequences for the afflicted groups and will almost certainly increase inequality. Not only does the closure of schools, colleges, and institutions interrupt education for students globally; it also occurs during a vital assessment period, when several tests have been postponed or canceled.

Perhaps internal assessments are deemed less important, and many have been abolished altogether. Various higher education institutions and colleges are phasing out traditional assessments in favor of online evaluation tools. This is a novel subject for both teachers and students, so assessments are almost certain to have a higher measurement error than usual. Global education institution closures will have a major (and presumably uneven) impact on students' learning; on internal assessments; and on the cancellation or substitution of public tests for qualifications.

School closures in an increasing number of nations to combat the spread of COVID-19 are impeding the education of millions of kids globally. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) has issued ten rules to ensure that learning continues unabated during this period (Covid-19 10 Recommendations UNESCO). Worldwide, COVID-19 has resulted in the closure of schools. Worldwide, almost 1.2 billion children are out of school. As a result, education has undergone dramatic changes, most notably the rise of e-learning, which involves instruction delivered remotely and through digital platforms. Online learning has been shown to increase

information retention and require less time, implying that the coronavirus-induced changes may be permanent.

How may these negative outcomes be mitigated? Once schools reopen, they will require resources to compensate for lost educational opportunities. The allocation of these resources and their targeting of the most vulnerable children remain unresolved issues. Given the studies indicating the importance of evaluations for learning, schools should consider postponing rather than skipping internal assessments. Recent graduates should be assisted in entering the work market to avoid protracted periods of unemployment.

Dr. Khayati Moudgil
Assistant Professor
Faculty of Health Sciences, JSSAHERM

Oral rinse for oral care

Oral health is related to good health and long living. Oral hygiene is a crucial part of overall health. Poor oral care can cause dental diseases such as cavities, gum disease and may extend to cancer, heart disease, diabetes and other parts of the body. Maintaining oral hygiene is a lifelong commitment that can be retained from earlier life by brushing, flossing and gargling. The survey study in dental cavities and gum diseases reveals that between 60-90% of children are having one cavity, 100% of adult people have minimum one dental cavity, 20% of adults ages between 35- 44 have severe gum diseases and 30% of people between 65-70 ages do not have any natural teeth left.

The factors which are responsible for oral diseases are poor brushing, smoking, eating sugary foods and drinks, diabetes, other infections such as HIV and AIDS, frequent vomiting (due to acid). Oral microorganisms are generally accumulating from mouth and harmless in small quantities. There may be chances of increasing the growth of bacteria, virus and fungi may harm to teeth and gum in presence of sugar diet. Acid-producing bacteria increase acid level in oral cavity which dissolves tooth enamel and causes dental cavity. Some bacteria near gum line develop sticky matrix termed plaque. Repeated accumulation of bacteria on plaque may harden and spread around the tooth can inflame gums and cause gingivitis. The higher quantity of bacterial deposition causes inflammation on gums and creates pockets with pus may form and the advanced stage of pus in gum is periodontitis. Other oral disease symptoms are bleeding or swollen gums after brushing, chronic bad breath, sudden sensitivity to cold and hot, pain with chewing and biting, toothache, ulcers and sores.

In recent years oral health has become more important, as researchers have discovered a link between diminished oral hygiene and weakened systemic conditions. It proves that a healthy mouth is able to help to maintain a healthy body. Oral and dental diseases can be reduced by brushing with antimicrobial agent containing, fluoride containing toothpastes, flossing the teeth regularly, by reducing sugar intake, avoiding tobacco products and eating fruits and vegetables, seeking dentist suggestion twice in a year. Improving oral hygiene through oral care products like oral rinse (mouth wash) became life's essential part.

Oral rinse or mouthwash

The oral rinse is a liquid containing medicament that is used for cleaning the mouth. About 10 ml of oral rinse is put in mouth and swished for 10-15 seconds and to be spitted out not to be swallowed. The oral pathogens which are responsible to produce oral diseases are eliminated through swishing. 10-15 seconds time duration is proven time for killing the microorganisms in mouth. Further, antibacterial and antiviral substances of oral rinse surround gum, teeth and mix with saliva to reduce oral diseases and inhibit the formation of plaque on teeth. Several studies revealed that use of oral rinse after brushing with fluoride toothpaste weakens the enamel and is

suggested to avoid. Mouthwash should be used after some time of brushing or post brushing the teeth. The efficacy of oral rinse in school children showed that 50% decrease in tooth decay and reduced the formation of film on teeth. Many oral rinses are there in the market, which are classified as alcohol based and alcohol-free oral rinses. Herbal extract containing alcohol free oral rinse is available in the market which helps to kill oral bacteria and prevents tissue damage by alcohol. It prevents microbial infection, bad odour, cavity formation, gum inflammation thereby making the person more confident with a fresh breath. Hence, improving oral health through oral care like oral rinse (mouth wash) improves overall quality of health, life and happiness.

Note: The suggestion is that, next time whenever you visit a supermarket or pharmacy while looking at the mouthwash or oral rinse brands, don't think they are non-essential. Oral rinse is important as toothpaste is important for oral care. These are known for avoiding and treating oral infections.

Discuss about oral rinse content and brands with pharmacists, dentists, physicians and surgeons. And choose a good oral rinse which is suitable for your mouth and health; use the same twice daily-this approach shall boost overall health and quality of life.

Dr. Jaishree Vaijanathappa
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Role of Pharmacist in Healthcare

When considering the most influential members of a patient's healthcare team, nurses, primary care physicians, and specialists receive special consideration. **A pharmacist's role** in arranging a patient's care on the front lines is sometimes forgotten. The frequently underappreciated role of pharmacists as key members of an ever-changing healthcare system, and how pharmacists are uniquely positioned to supervise medications, both individually and in combination, from the multiple prescribers a patient may have. Having the capacity to coordinate a patient's entire pharmaceutical regimen enables the pharmacist to make recommendations about how to take prescribed medications precisely and effectively, discuss medication safety, identify and manage adverse effects, and assist in managing chronic health conditions.

Many patients are unaware that pharmacists have significant training in providing fundamental healthcare services such as blood pressure screenings, instructing patients with diabetes on the proper use of glucometers, and finally offering interpretation of these results and diagnostic tools. Pharmacists can also serve as an accessible resource for recommending over-the-counter medicines for common ailments, without the expense or time commitment associated with visiting a doctor's office.

On a regular basis, pharmacists provide outreach or Mediation Therapy Management (MTM) services to prescribers and patients in the community, hospital, ambulatory, and managed care settings. If a pharmacist receives a prescription from a prescriber that appears to be incompatible with the patient's other medications, the dose or duration is inappropriate, or the cost is excessive, the pharmacist has the ability to recommend appropriate alternatives to the prescriber by contacting the prescriber.

In managed care, pharmacists assist with the management of a patient's pharmaceutical regimen on a "behind-the-scenes" basis. Through MTM services, managed care pharmacists can act as a liaison between prescribers and patients by engaging patients in discussions about correct medication usage, the necessity of medication adherence, and the identification of high-risk drugs. Pharmacists can also reach out to patients who are currently taking expensive prescriptions, suggesting acceptable alternatives such as interchangeable generics or comparable drugs within the same class, or advising on drug therapy discontinuation.

MTM services can also help detect care gaps or risky drug combinations that may result in disease exacerbations, additional drugs or expenditures connected with nonadherence and side effects, or hospitalizations owing to suboptimal care.

Apart from patient-specific interventions, managed care pharmacists are critical in promoting cost-effective and clinically sound medication therapy through the practice of formulary management, which is widely used by health plans, pharmacy benefit managers, hospitals, and accountable care organizations. In today's environment of rapidly rising drug prices, pharmacists' clinical expertise can assist payors in mitigating the costs associated with increased utilization, drug therapy innovation (e.g., cell and gene therapy), and a lack of manufacturer competition in drug classes for rare disease states. Pharmacists in managed care have the ability to evaluate and compare clinical consensus guidelines and drug therapy recommendations, to review data from clinical trials, and to assess economic impact in order to develop appropriate treatment algorithms and frequently used formulary management tools, such as step therapy and prior authorization requirements. With the Food and Drug Administration (FDA) approving an unprecedented number of new drug entities in recent years, the pharmacist's role in reviewing novel and complex drug technologies is critical for ensuring patients receive appropriate, cost-effective therapy across the spectrum of individual and public health.

In recent years, the pharmacist's role in public health has evolved and expanded. In these contexts, pharmacists are responsible for conducting patient assessments, ordering and interpreting laboratory tests, formulating therapeutic regimens, and eventually employing prescription authority to commence, amend, or cease pharmacological treatment. As the healthcare sector transitions away from a volume-based reimbursement structure toward a value-based reimbursement structure, the pharmacist's previously unacknowledged function as a vital healthcare team member will become apparent. As practitioners trained to examine the whole patient, pharmacists bridge the gap between prescribers and have an impact on the clinical and economic outcomes of drug therapy in an ever-changing healthcare system. Professional medical and pharmacy organizations continue to play a critical role in pushing pharmacists as an underappreciated resource in any healthcare setting.

Dr. Ashish Wadhwani,
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Pharmacovigilance: Need of an hour

Pharmacovigilance is a term that refers to the process of monitoring pharmaceutical products. The development of pharmaceuticals and vaccinations has revolutionized illness prevention and treatment. Along with their benefits, pharmaceutical drugs may have unwanted and/or unexpected side effects. Pharmacovigilance is the science and practice of identifying, assessing, comprehending, and preventing adverse reactions to medications or vaccines.

Before they are approved for use, all medications and vaccines undergo extensive safety and efficacy testing in clinical trials. Clinical trials, on the other hand, include investigating these items in a limited number of carefully chosen individuals for a brief period. Certain adverse effects may become apparent only after these drugs have been used by a diverse population, including those with concurrent conditions, for an extended time. Pharmacovigilance within the industry serves a similar purpose to that of regulatory agencies: to safeguard patients from avoidable injury by detecting previously unknown pharmacological risks, explaining predisposing variables, debunking false safety signals, and assessing risk concerning benefit. While businesses and regulatory bodies may have divergent opinions, they are increasingly collaborating and sharing information. However, central pharmacovigilance divisions inside large pharmaceutical corporations are sometimes substantially more resourced and possess significantly more 'in-house' expertise about the safety of their specific medicines.

The Future

Pharmacovigilance will continue to evolve as a discipline within the pharmaceutical business. Historically, pharmacovigilance teams spent a significant portion of their time reporting individual cases to regulatory bodies worldwide, meeting significantly disparate local criteria. Current trends indicate that this component will be simplified eventually. Worldwide harmonization efforts will result in significantly more uniform international requirements, while rapid advancements in electronic communication will enable automated delivery of case reports inside organizations and to regulatory bodies.

Thus, the future focus of the pharmacovigilance effort will be on science rather than on formal regulatory issues, while both will remain critical. By developing and applying methods from fields such as epidemiology and health economics, we will be able to make far more accurate assessments of the true impact of therapies on public health and health care expenditures. This is consistent with the growing need from governments, health care providers, and institutional buyers for verification of treatment benefits with acceptable risk profiles. The task for those involved in pharmacovigilance will be to explore and record, in epidemiological and health economic terms, whether drug safety profiles established in clinical trials in narrowly selected populations remain valid when medications are used in clinical practice. Additionally, identifying potential rare but

major adverse drug reactions (ADRs) and developing strategies to prevent or mitigate their impact will remain critical jobs.

Why is Pharmacovigilance required?

No therapeutic product is completely or completely safe for everyone, everywhere, and at all times. When taking medications, we must always live with some degree of uncertainty. The thalidomide crisis of the 1960s resulted in limb malformations in newborns of mothers who took the medicine while pregnant. This means that pre-marketing safety evaluations of drugs in animal research and phase 1-3 clinical trials are insufficient.

Pharmacovigilance is necessary for four primary reasons:

1. Clinical trials have a small number of subjects and provide insufficient evidence of safety.
2. Adverse Drug Reactions can result in serious health problems and, in rare circumstances, death.
3. We must safeguard patients from unwarranted damage, as many adverse events are preventable.
4. To promote rational medication use and treatment adherence

And there are two particular reasons why Mauritius requires Pharmacovigilance:

1. The incidence of chronic diseases, which need lifetime medication.
2. The widespread use of generic medications

The WHO's international drug surveillance program began in 1968 and is headquartered in Uppsala, Sweden.

Mauritius formed a National Pharmacovigilance Committee in December 2011 and became a full member of the WHO Programme for International Drug Monitoring in 2014. It is responsible for managing and resolving any potential safety and quality concerns associated with the use of health products sold in Mauritius.

Source of Mauritius data: Pharmacovigilance [Internet]. Health.govmu.org. 2021 [cited 13 July 2021]. Available from: https://health.govmu.org/Pages/Departments Hospitals/National%20Pharmacovigilance%20Committee/Pharmacovigilance.aspx

Dr. Khayati Moudgil, Assistant Professor,
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Is a Vegan Diet Beneficial for Bone Health?

Veganism is fashionable. Scientific research is being conducted to determine how this type of food influences health. The German Federal Institute for Risk Assessment (BfR) recently examined the bone health of 36 vegans and 36 people following a mixed-food diet using an ultrasound measurement of the heel bone. The result: on average, vegans had lower ultrasonic values than the other group. This is a sign of poor bone health. Additionally, the researchers determined biomarkers in blood and urine. This study will look for nutrients that may be associated with diet and bone health. Out of 28 nutritional status and bone metabolism indicators, twelve biomarkers were identified as being strongly related to bone health, including the amino acid lysine and vitamins A and B6. The data indicate that in the majority of cases, vegans had lower quantities of the combined biomarkers. This could account for worse bone health.

"A vegan diet is frequently seen as healthful. Our research findings, however, demonstrate that a vegan diet does affect bone health." Professor Dr. Andreas Hensel, President.

Nutrition is critical for bone health. This was examined more extensively in the cross-sectional "Risks and benefits of a vegan diet" study conducted by the BfR. The study enrolled 72 men and women. All individuals' bone health was evaluated using ultrasound measures at the heel bone. Additionally, data on age, smoking status, education, BMI, physical activity, and alcohol use were gathered. The BfR identified a pattern of twelve biomarkers associated with bone health using a statistical model based on 28 nutrition- and bone-related data from blood or urine. Vitamins A and B6, the amino acids lysine and leucine, omega-3 fatty acids, selenoprotein P, iodine, thyroid-

stimulating hormone, calcium, magnesium, and -Klotho protein were all found to be beneficial for bone health when combined. In this pattern, higher ultrasound levels resulted in lower FGF23 concentrations.

"In conclusion, the study discovered disparities in bone health between vegans and omnivores, as well as in bone health biomarkers. Additionally, an exploratory biomarker pattern was established that suggested a combination of biomarkers, possibly explaining why vegans have poorer bone health than omnivores. Additional research is needed to corroborate these findings," the authors of the study concluded.

Picture reference: Healthy Vegan Foods That Will Help You Stay Full [Internet]. LIVE KINDLY. 2021 [cited 13 July 2021]. Available from: https://www.livekindly.co/healthy-vegan-foods-stay-full/

Compiled By:

Ms. Umaira Oodally, 2nd Year, B Pharm Student, JSSAHERM

Is Your Hair Loss Due to Iron Deficiency?

A modest bit of hair in the shower drain or on the hairbrush is not always a reason for alarm. According to the Academy of Dermatology, daily hair loss of 100 or more hairs is entirely normal. Gradual hair loss is also common as you age, and is primarily inherited. However, hair loss, particularly when it occurs suddenly or in childhood, might be a sign of certain medical disorders or vitamin shortages.

Low thyroid function (low zinc and selenium levels) and iron deficiencies are two of the most prevalent non-hereditary causes of hair loss. Both are rather frequent, particularly among women. And, while they are two distinct illnesses, they overlap similar symptoms. Along with hair loss, weariness and cold hands and feet may indicate hypothyroidism or iron deficiency. A simple blood test can easily diagnose these disorders. They are easily rectified with thyroid hormone replacement or iron supplementation.

We can obtain additional iron through red meat, poultry, and shellfish, as these foods contain the more absorbable heme form of iron. Beef, chicken livers, clams, and oysters are especially rich in this nutrient. While plants contain significant amounts of iron—particularly dry beans and lentils, spinach, quinoa, and pumpkin seeds—the nonheme iron in plants is not as readily absorbed. To compensate for the reduced absorption of iron from plant foods, strict vegans are advised to consume 50% more iron than the recommended daily intake (RDA). Consuming vitamin C-rich foods can aid in the absorption of iron from plant sources. Vegans are no more prone than meat eaters to suffer from iron insufficiency. However, if you are a strict vegan, you may prefer to abstain from the black tea during meals. Tea contains tannins, which inhibit the absorption of iron from plant diets as well. (Herbal tea is fine.)

Calcium supplements in high quantities, particularly calcium carbonate, the type found in the majority of supplements, can also inhibit iron absorption. You do not need to be concerned about iron and calcium sources in meals. However, if you are at risk of iron deficiency and take a calcium supplement, take it before bed to avoid interfering with the iron in your meals. Take your iron supplement at a separate time of day if you are also taking one.

It is prudent to ensure that your diet contains an adequate amount of iron. The following table summarizes the recommended daily allowances for various age groups:

• Adolescent girls: 15 mg daily • Adolescent boys: 11 mg daily • Adult men and postmenopausal women: 8 mg daily • Menstruating females: 18 mg daily • Pregnant females: 27 mg daily

Adolescent girls, premenopausal or pregnant women are the three groups most likely to fall short.

Anemia is not usually the result of an iron shortage.

Anemia can be caused by an iron deficiency. However, anemia is not necessarily the result of an iron shortage. Anemia can also be caused by low folate or vitamin B12 levels. Copper is a mineral that aids the body in iron absorption, the production of red blood cells, and the maintenance of healthy blood vessels, the immune system, nerves, and bones. And, to further complicate matters, taking folate or B12 supplements can make it more difficult to detect an iron shortage.

A balanced diet that includes iron-rich foods can help keep you and your hair healthy. Additionally, significant hair loss may indicate a vitamin shortage or other health problems. However, if you believe you are losing an excessive amount of hair, consult your doctor before self-diagnosing or self-treating with vitamin supplements, particularly iron.

Is your hair falling out? It is possible that nutritional inadequacies are to fault. Reversing it begins with identifying the source.

Reference: Monica Reinagel, MS, LD/N, Certified Nutrition Specialist, CNS Nutrition Diva. (https://www.quickanddirtytips.com/health-fitness/healthy-eating/know-your-nutrients/iron-deficiency-hair-loss?utm source=sciam&utm campaign=sciam)

Composed By:

Ms. Khatoon Jafferally, 2nd Year BSc student, JSSAHERM

Alkaptonuria: Rare Metabolic disorder

Introduction

Alkaptonuria is a rare autosomal recessive (AR) metabolic disorder occurring due to deficiency of the enzyme homogentisate 1,2 dioxygenase which is involved in the metabolism of tyrosine. Deficiency of the enzyme results in the binding of the oxidized polymers of homogentisic acid (HGA) to connective tissue and its excretion in the urine. The presence of HGA in urine is responsible for the characteristic black coloration of urine on standing, while its deposition in connective tissue leads to bluish-green discoloration.

Signs & Symptoms

Alkaptonuria is a genetic disorder, and urine that turns dark is present from birth. However, additional symptoms usually do not appear until adulthood. Symptoms are generally slowly progressive. The urine of individuals with alkaptonuria may be abnormally dark or it may turn black upon long-standing exposure to the air. However, since this change often takes several hours, it often goes unnoticed. During infancy, diapers may be stained black (from urine exposure to air), although this is often missed or ignored.

The first noticeable signs and symptoms of alkaptonuria usually do not develop until approximately 30 years of age and are due to chronic accumulation of homogentisic acid in connective tissue, especially cartilage. Affected individuals develop a condition called ochronosis, in which connective tissue such as cartilage turns blue, grey, or black due to the chronic accumulation of homogentisic acid. In many individuals, the cartilage within the ear may become thickened, irregular, and discolored blue, grey, or black. Eventually, this discoloration may be apparent on the skin overlying the cartilage. In many cases, the whites of the eyes (sclera) also become discolored. However, this pigmentation does not interfere with vision.

In addition to cartilage, homogentisic acid accumulates in other connective tissue including tendons and ligaments, and even bone. Over time, affected tissue becomes discolored, brittle, and weak. Affected individuals may develop abnormalities affecting the tendons including thickened Achilles tendons and inflammation of the tendons (tendonitis). Affected tendons and ligaments may be particularly susceptible to rupturing. Eventually, discoloration of tendons may become visible on the overlying skin.

Long-standing alkaptonuria leads to chronic joint pain and inflammation (arthritis), especially in the spine and large joints (ochronotic arthropathy). Arthritis can be severe and disabling. Low back pain and stiffness are common symptoms and are sometimes seen before the age of 30. Discs between the vertebrae flatten and calcify. Eventually, vertebrae or other bones may fuse causing stiffening or immobility of affected joints (ankylosis). Spinal involvement may lead to abnormal

outward curvature of the spine causing hunching of the back (kyphosis) and loss of height. The hip, knees, and shoulders are commonly affected as well. Joint mobility is usually diminished and fluid buildup in affected joints (effusions) may also occur. Joint abnormalities are progressive and may eventually necessitate a joint replacement. Joint disease in alkaptonuria tends to begin earlier and progress more rapidly in males than females.

Less often, additional symptoms may occur in alkaptonuria. Although these symptoms occur less often than the main symptoms of alkaptonuria, they occur with greater frequency than would be expected in the general population. Such symptoms include kidney stones, which develop in 50 percent of affected individuals over 64 years of age. Men with alkaptonuria may also develop prostate stones. Passage of these black stones can be extremely painful.

In some individuals, heart disease may develop due to the accumulation of homogentisic acid within the aortic or mitral valves. This accumulation causes thickening of the valves and narrowing (stenosis) of the openings of the valves. Occasionally, the narrowing is severe enough that the aortic valve needs to be replaced. The aortic valve connects the lower left chamber (main pumping chamber) of the heart with the aorta (the main artery of the body). The mitral valve is located between the left upper and left lower chambers of the heart. Affected individuals may develop calcification of the valves and/or backflow of blood back through the affected valves (regurgitation), which can lead to reduced blood flow throughout the body. Widening (dilation) of the aorta may also occur. In some cases, calcification of the small blood vessels that supply blood and oxygen to the heart (coronary blood vessels) may also occur.

Alkaptonuria does not cause developmental delays or cognitive impairment and does not appear to affect life span. However, chronic pain and mobility issues can develop.

Causes

Alkaptonuria is caused by mutation of the homogentisate 1,2-dioxygenase (*HGD*) gene. The *HGD* gene contains instructions for creating (encoding) an enzyme known as homogentisate 1,2-dioxygenase. This enzyme is essential for the breakdown of homogentisic acid. Mutations of the *HGD* gene result in deficient levels of functional homogentisate 1,2-dioxygenase, which, in turn, leads to excess levels of homogentisic acid. Although homogentisic acid is rapidly cleared from the body by the kidneys, it also slowly accumulates in the various tissues of the body, especially connective tissue such as cartilage. Overtime (rarely before adulthood), it eventually changes the color of affected tissue to a slate blue or black. Long-term, chronic accumulation of homogentisic acid eventually weakens and damages affected tissue and leads to many of the characteristic symptoms of alkaptonuria.

Alkaptonuria is inherited as an autosomal recessive trait. Recessive genetic disorders occur when an individual inherits the same abnormal gene for the same trait from each parent. If an individual receives one normal gene and one gene for the disease, the person will be a carrier for the disease, but usually will not show symptoms. The risk for two carrier parents to both pass the defective gene and, therefore, have an affected child is 25 percent with each pregnancy. The risk to have a child who is a carrier like the parents is 50 percent with each pregnancy. The chance for a child to receive normal genes from both parents and be genetically normal for that particular trait is 25 percent. The risk is the same for males and females.

Related Disorders

Symptoms of the following disorders can be similar to those of alkaptonuria. Comparisons may be useful for a differential diagnosis.

Ochronosis can also occur as a reversible, acquired condition that is unrelated to alkaptonuria. In such cases, ochronosis occurs secondary to exposure to a variety of substances including benzene, phenol, and trinitrophenol. Individuals have also developed ochronosis following long-term use of certain medications including the antimalarial drug Atabrine®, the skin-lightening agent hydroquinone, or the antibiotic minocycline. Prolonged use of carbolic acid dressings, which may be used to treat chronic skin ulcers, can also cause ochronotic skin changes.

The joint and spinal symptoms associated with alkaptonuria can resemble symptoms associated with other disorders such as rheumatoid arthritis, ankylosing spondylitis, and osteoarthritis.

Diagnosis

The diagnosis of alkaptonuria is made upon identification of characteristic symptoms, a detailed patient history, a thorough clinical evaluation, and a variety of specialized tests. Identification of vastly elevated levels of homogentisic acid in the urine is indicative of alkaptonuria. Alkaptonuria should be suspected in individuals with dark urine. However, since some individuals with

alkaptonuria do not have dark urine, it may be advisable to rule out the disorder for all individuals with osteoarthritis, especially those with an early onset of symptoms.

Clinical Testing and Work-up

Elevated amounts of homogentisic acid in the urine can be detected by gas chromatography-mass spectrometry analysis. Various imaging techniques can be used to determine the presence and extent of joint and spinal disease or the involvement of the aortic or mitral valves.

Molecular genetic testing, which can detect mutations in the HGD gene, is available on a clinical basis. However, this testing is not required to confirm the diagnosis.

In individuals over 40, echocardiography may be recommended to detect potential cardiac complications such as aortic dilation or calcification or regurgitation of the aortic or mitral valves. With echocardiography, sound waves are bounced off the heart (echoes), enabling physicians to study cardiac function and motion.

Computed tomography (CT) scan may be recommended to detect coronary artery calcification.

Standard Therapies

Treatment

The treatment of alkaptonuria is aimed at the specific symptoms that are present in each individual. Individuals with alkaptonuria often receive anti-inflammatory medications to treat joint pain. In severe cases, stronger medications such as narcotics may be recommended. Pain management is tailored to each individual's specific case and requires long-term follow-up and adjustment.

Some individuals with alkaptonuria will benefit from physical and occupational therapy, which can help maintain the strength and flexibility of muscles and joints. Genetic counseling may be of benefit for affected individuals and their families.

Some individuals with alkaptonuria require surgical intervention. Approximately half of the individuals with alkaptonuria will require hip, knee, or shoulder joint replacement, often by 50-60 years of age. Infrequently, individuals require spinal surgery, including fusion and/or removal of the lumbar discs. Surgery to replace the aortic or mitral valves may also be necessary. In some cases, chronic and painful kidney or prostate stones may require surgical intervention or preventive (prophylactic) therapy.

Dietary restrictions have generally proven ineffective. Severe restriction of protein intake is required and has proven difficult for individuals to maintain over a long period. In addition, long-term, severe restriction of protein intake can be associated with complications.

In older children and adults, high-doses of vitamin C have also been used to treat alkaptonuria because it hinders the accumulation and deposition of homogentisic acid. However, long-term use of vitamin C has generally proven ineffective and definite clinical studies on its efficacy are lacking.

Activities that place significant physical stress on the spine and joints such as high-impact sports or heavy manual labor should be avoided.

Nitisinone 10 mg daily was well tolerated and effective in reducing urinary excretion of HGA. Nitisinone decreased ochronosis and improved clinical signs, indicating a slower disease progression.

References:

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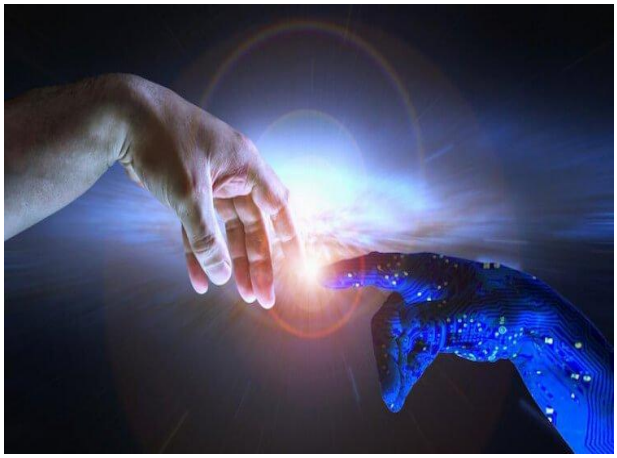
Compiled By:
Mr Umar Mahamed, 2nd Year, B Pharm Student, JSSAHERM

Digital Immortality

Digital immortality is a notion that has evolved in the last decade and is described in this post as the continuation of an active or passive digital presence following one's death. This blog will discuss how developments in information management, machine-to-machine communication, data mining, and artificial intelligence have enabled the possibility of an active afterlife presence. It will demonstrate how digital immortality has progressed beyond simple memorial pages and updates from deceased family members or friends. There are even businesses devoted entirely to the creation of digitally immortal personalities.

Given the breadth of connected rituals and behaviors, there is evidence that digital immortality is affecting religious contexts. For instance, digital immortality is affecting grieving and mourning rituals. Additionally, it is generating new types of legacy and posing new challenges for the funeral business.



Artificial Intelligence

Often, artificial intelligence is associated with robots or thinking machines. Artificial intelligence (AI) is commonly associated with science fiction characters such as the Hal 9000 computer from 2001 or the androids from Channel 4's Humans. In contemporary marketing parlance, it is defined as any decently complex software or algorithm – frequently based on machine-learning principles – but the complexity and diversity of AI extend much further. Recently, significant advancements in AI have been made, including enhanced text-to-speech, improved speech recognition, and high-quality avatars (the bodily representation of one's self).

The difficulty with artificial intelligence is overcoming the 'uncanny valley'; the concept that human duplicates may induce uneasiness in terms of appearance, sound, and particularly behavior, such as emotional responses. For instance, virtual assistants such as Siri and Alexa provide voice and conversational interfaces to information, fulfilling some of the promises made by virtual

personal assistants. The increased use of machine learning techniques to mine enormous volumes of data and derive conclusions that are comparable to (or even better than) human analysis.

Humanoids Virtuales

One of the most significant modifications has been the abandonment of a broad definition of AI in favor of subtypes. One particular area of growth in virtual humans. Turing proposed a test dubbed the 'imitation game' to address the question, 'Can machines think?' He forecasted that the suggested exam will be passed by approximately the year 2000, but this did not occur.

Searle argued in the 1980s that the computer is merely a symbol processing system that cannot be considered to think.

Is it intelligent if a machine can play chess better than the world's best human player? Searle would argue that the computer is not intelligent; rather, it is the human programmers who have programmed the system to implement their ideas. How is this, however, different from a human mentor teaching a student how to play chess? Do we assert that the mentor is bright and the learner is simply according to the guidelines presented to her?

As evidenced by the literature, the phrase 'Virtual Humans' is frequently used to refer to Chatbots, Autonomous Agents, and Pedagogical Agents. Virtual Humans are computer-generated characters that exhibit life-like characteristics such as speech, emotion, mobility, and gestures. Numerous studies have demonstrated that many users are not just comfortable engaging with high-quality Virtual Humans, but that an emotional connection between users and Virtual Humans can be created. The emphasis is on allowing the user to interact with the software through natural language rather than through the use of icons or menu selections. Many people are concerned about artificial intelligence's influence and future. While some of the concern is justified, it is critical to understand how media coverage can exaggerate allegations.

There are valid concerns regarding the use of artificial intelligence to control automobiles and weapons systems. However, as Stephen Hawking indicates, it is highly improbable that "the development of full AI would mark the end of the human species."

Abbreviations: AI- Artificial intelligence

- Reference: Hern, ‘Give robots “personhood” status, EU Committee argues’- The Guardian 17th January 2017
- Tuning, ‘Computing machinery and intelligence’, Mind, LIX/236 (1950), pp.433-460

Picture reference:

https://scienews.com/computers/12509-is-it-possible-digital-immortality-and-whether-it.html

Written by:
Mr. Abdallah Sultan, 2nd Year, B Pharm Student, JSSAHERM

FDA Approved Drugs

S.No	Drug Name	Indication	Date of Approval
1	**Zynrelef (bupivacaine and meloxicam) Injection**	For the management of postoperative pain.	12/05/2021
2	**Rybrevant Injection**	For the treatment of adult patients with locally advanced or metastatic non-small cell lung cancer (NSCLC)	21/05/2021
3	**Camcevi (leuprolide mesylate) Injection**	For the treatment of adult patients with advanced prostate cancer	26/05/2021
4	**Myfembree Tablets**	For the management of heavy menstrual bleeding associated with uterine leiomyomas (fibroids) in premenopausal women	26/05/2021
5	**Lybalvi (olanzapine and samidorphan) Tablets**	For the treatment of schizophrenia and bipolar I disorder	28/05/2021
6	**Wegovy (semaglutide) Injection**	For chronic weight management in adult patients who are overweight (BMI ≥27 kg/m2) or obese (BMI ≥30 kg/m2)	04/06/2021
7	**Tembexa (brincidofovir) Tablets and Oral Suspension**	For use as a medical countermeasure for smallpox	04/06/2021
8	**Aduhelm Injection**	For the treatment of Alzheimer's disease	07/06/2021
9	**Rezipres (ephedrine hydrochloride) Injection**	For the treatment of clinically important hypotension occurring in the setting of anesthesia	14/06/2021
10	**Soaanz (torsemide) Tablets**	For the treatment of edema associated with heart failure or renal disease in adults	14/06/2021
11	**Astepro Allergy (azelastine) Nasal Spray**	For the treatment of seasonal allergic rhinitis	17/06/2021
12	**Rylaze Injection**	For the treatment of acute lymphoblastic leukemia (ALL) and lymphoblastic lymphoma (LBL)	30/06/2021

13	**Kerendia (finerenone) Tablets**	For the treatment of patients with chronic kidney disease (CKD) associated with type 2 diabetes (T2D)	09/07/2021
14	**Rezurock (belumosudil) Tablets**	For the treatment of patients with chronic graft-versus-host disease (cGVHD)	16/07/2021
15	**Twyneo (tretinoin and benzoyl peroxide) Cream**	For the treatment of acne vulgaris in adults and children 9 years of age and older	26/07/2021
16	**Saphnelo (anifrolumab-fnia) Injection**	For the treatment of adult patients with moderate to severe systemic lupus erythematosus (SLE)	30/07/2021
17	**Nexviazyme (avalglucosidase alfa-ngpt) Lyophilized Powder for Injection**	For the treatment of patients with late-onset Pompe disease	06/08/2021
18	**Welireg (belzutifan) Tablets**	For the treatment of adult patients with von Hippel-Lindau (VHL) disease who require therapy for associated renal cell carcinoma (RCC), central nervous system (CNS) hemangioblastomas, or pancreatic neuroendocrine tumors (pNET)	13/08/2021

An Ode to One Year Journey at JSSAHER Mauritius: A Student's Perspective

Education is the key to success. We are nothing without knowledge. Education is what distinguishes us from others. I strongly believe that good education depends not only on the quality of teaching but also on the environment of the institution. Today, after completing my first year of the B Pharm at the JSS Academy of Higher Education and Research Mauritius (JSSAHERM), I can proudly speak of my student experience and say that the Academy has everything that one needs to succeed in one's career and professional life.

Located in one of the most serene places in Mauritius, at Bonne Terre, Vacoas, JSSAHERM provides a natural, academic, student-friendly and beautiful green campus environment, with many ornamental plants and trees, and purpose-built buildings suitable for teaching, learning and research. All the staff, academic and non-academic, including the Chief Executive Officer of the institution, have always been very helpful, encouraging, and considerate towards us, motivating and pushing us to unleash our potential and to do better every day.

The qualified and experienced lecturers inspire each one of us to work harder and progress every day. Not only do they create an academic, friendly, and positive atmosphere that helps us to enjoy the lectures, but they are always ready to invest time in helping us. I should say that it is indeed a privilege to be able to learn from them and their experiences. It is important to note that our lecturers have been part of many prestigious projects and have published many papers and articles. The classrooms are designed to assist modern teaching methods. Tools such as projectors and other teaching aids are available in lecture rooms, which facilitate teaching by lecturers as well as understanding by students. Moreover, to promote a better understanding of the modules, we are involved in several extra-curricular activities, such as visiting the SSR Botanical garden to understand the importance of remedial biology and visiting clinics and medical laboratories. The laboratories on campus are very sophisticated and equipped with all the reagents and chemicals required. It is well ventilated and caters to both individual and group work. It is very important to include that we have been able to satisfy the sanitary rules and regulations set by the government in a bid to prevent the spread of COVID- 19. It was easy to follow social distancing in these spacious lecture rooms, laboratories, and libraries. Wearing a face mask was compulsory and hand sanitizers were at our disposal.

My favourite place on campus is the library. The library is well furnished and the shelves are full of books and magazines. Online journals and digital books are also available. Internet facilities and PCs are also available, which are now of utmost importance nowadays. It also provides a flexible learning space to do independent as well as group work. The non-teaching staff; the

receptionist, librarian, security officers, and cleaning staff are always very welcoming, wishing each one of us a good day every morning.

The campus has all the facilities, including a football playground, basketball court, recreation areas, and the cafeteria, at our disposal. It has a very extensive wireless Wi-Fi coverage network with several access points and is also on 24/7 camera surveillance and fully Wi-Fi. Indeed, my first year at JSS AHER has been very enriching and satisfactory. I am sure that in the coming years, I will gain more experience and knowledge.

Ms. Misbah Bibi Mariam Dhuny

2nd Year BPharm, JSSAHERM

Events' Corner

Report on Virtual Guest Lecture:

Event 1: Introduction to Bioinformatics and Hands on Training on *in silico* methods

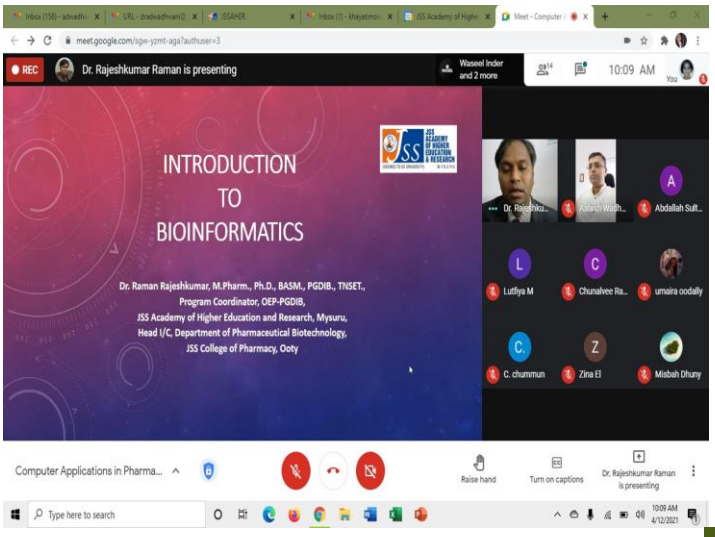
The guest lecture was organized for the benefit of the students of Faculty of Health Sciences and Faculty of Life Sciences on the topic "Bioinformatics and *in silico* methods' . The session was divided into two lectures where the first lecture was to familiarize the students with basics of bioinformatics and the second lecture was on hands-on training on various databases used in bioinformatics. The two sessions were;
First session - Monday, 12th April 2021 @ 10:00 AM
Second session - Saturday, 17th April 2021 @ 10:00 AM
with the following objectives;

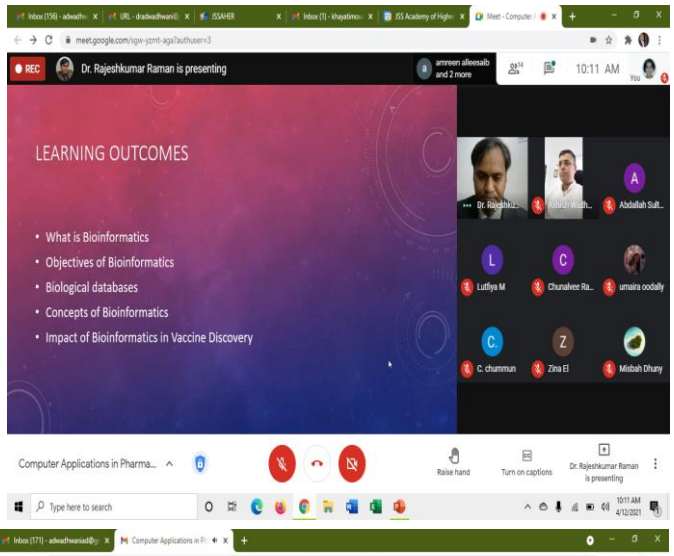
- ✓ **What is Bioinformatics**
- ✓ **Objectives of Bioinformatics**
- ✓ **Biological databases**
- ✓ **Concepts of Bioinformatics**
- ✓ **Impact of Bioinformatics in Vaccine Discovery**

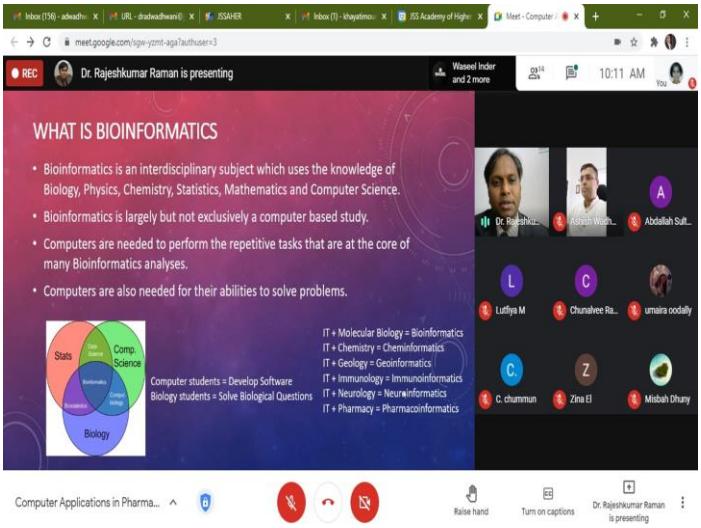
- Renowned bioinformatics expert **Dr Raman Rajeshkumar**, Assistant Professor and Head i/c, Department of Pharmaceutical Biotechnology, JSS College of Pharmacy, Ooty and Program Coordinator, OEP-PGDIB, JSSAHER, Mysuru was the speaker of the webinar.
- Dr Ashish Wadhwani, welcomed the speaker and briefed about the importance of bioinformatics in today's world.
- Dr Rajesh in his lecture covered the applications of bioinformatics, various biological databases used for drug design & discovery, impact of bioinformatics on drug discovery and *in silico* vaccine design etc. in his first session.
- The second session was completely hands-on experience on various databases. Dr Rajesh explained well and showed the students how to use NCBI, EMBL – EBI, DDBJ, PDB databases for protein and drug design and discovery.
- The students thoroughly enjoyed both the sessions and requested to have some more hands-on sessions like this to have in-depth knowledge on the mentioned topic.
- Dr Khayati Moudgil, Assistant Professor thanked the speaker for his time in engaging the students and giving them the insights of bioinformatics.
- The google meet link was https://meet.google.com/sgw-yzmt-aga
- The recording is also available on the following link for future reference https://mail.google.com/mail/u/1/#search/meet-recordings-noreply%40google.com/FMfcgxwLtQVjmRHnFlsmqSbzzdhCFlkC?projector=1

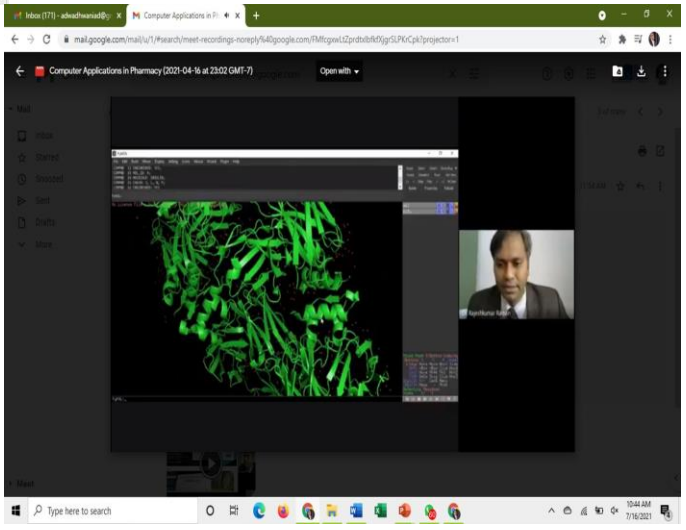
and
https://drive.google.com/file/d/1Sg7Rl-CA9MQF4kV5axh7iuAfryDEGrpy/view

Glimpse of the session;









Report on Webinar:

Event 2: Covid – 19 Vaccines and Variants: Time to Get Back to Normalcy -A Public Health Awareness Lecture

In this challenging time of Covid-19 pandemic, it is important to understand about different vaccines and variants to get back to normalcy. The school of Pharmacy, JSS Academy of Higher Education and Research, Mauritius conducted the webinar on the mentioned topic on 02nd July 2021 with the following objectives.

- ✓ **Covid-19 infection and pathophysiology**
- ✓ **Different Vaccines and Vaccination**
- ✓ **Vaccine Safety and Efficacy**
- ✓ **Covid 19 Variants and Vaccine Protection**
- ✓ **Back to Normal / New Normal**

Renowned immunologist **Dr Manas Mandal**, Fulbright Specialist & Professor, Roseman University of Health Sciences, College of Pharmacy, Henderson, USA and Visiting Professor of JSSAHER Mauritius was the speaker of the webinar.
Dr Ashish Wadhwani, Convenor and Professor and Head, Faculty of Health Sciences, JSSAHERM welcomed the virtual gathering and invited Dr Praveen Mohadeb, CEO for his opening remarks.
Dr Mohadeb mentioned about how the lives and livelihoods of every citizen is affected globally and set the correct tone of the webinar with the questions on Which Vaccine? How long it will be effective? Dose Interval? Safety? Efficacy? etc. etc.
Dr Wadhwani introduced the speaker and requested Dr Mandal to deliver his webinar on "Covid – 19 Vaccines and Variants: Time to Get Back to Normalcy - A Public Health Awareness Lecture"
Dr Mandal in his talk for about one hour justified the objectives of the session.

Despite the fact that registration was not compulsory, we note that we were more than 800 registered participants in the virtual conference room, coming from various countries across the globe including Mauritius, India, USA, UK, Malaysia, Korea, Oman, Iraq, Algeria, Singapore, Sudan and Philippines.

The Q & A session was coordinated by Dr Khayati Moudgil, the coordinator of the webinar.
There were number of questions raised which was well justified by Dr Mandal.

The participants appreciated the much-needed talk on Covid-19 vaccines and variants and congratulated team JSSAHER Mauritius for the efforts taken to organize the lecture at the right time. The e-certificate was issues to all the registered participants.

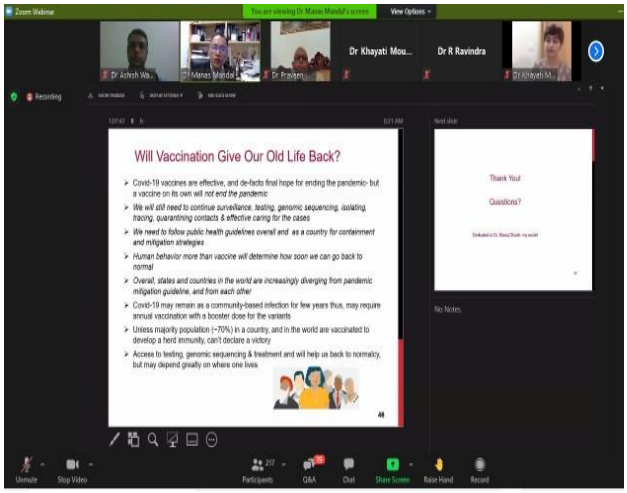
Dr Moudgil in her closing remarks summarized the webinar and thanked the competent authorities from JSSAHER Mysuru and Mauritius and all other participants for joining the session.

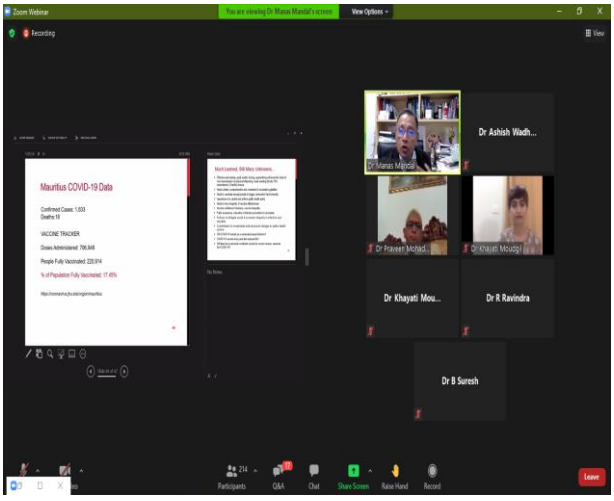
Dr Moudgil also thanked Dr Ravindra, the Chief Information Officer and his entire team from JSSAHER Mysuru for IT support.

The webinar link was:
https://us02web.zoom.us/webinar/register/WN_EMlnyui0Rr2XKUC9x_bCyA

The webinar recording is also available on YouTube for future reference
https://www.youtube.com/watch?v=wtX_jKSDGfA

Glimpse of the session;





Report on Virtual Guest Lecture:

Event 3: Introduction to Scientific Writing and Literature Review

The guest lecture was organized for the benefit of the students of the Faculty of Health Sciences and Faculty of Life Sciences on the topic "Introduction to Scientific Writing and Literature Review". The session was very well received by the students on writing skills, various types of articles, indexing and databases, writing tools, and reference software. The session was conducted via Google meet on 16 July 2021 with the following objectives;

- ✓ **What is Scientific Writing**
- ✓ **Objectives of Literature review**
- ✓ **Writing tools**
- ✓ **Types of scientific articles**
- ✓ **Various Softwares**

Research Coordinator Dr. Karri V V S Narayana Reddy, Assistant Professor, Department of Pharmaceutics, JSS College of Pharmacy, Ooty was the speaker of the webinar.

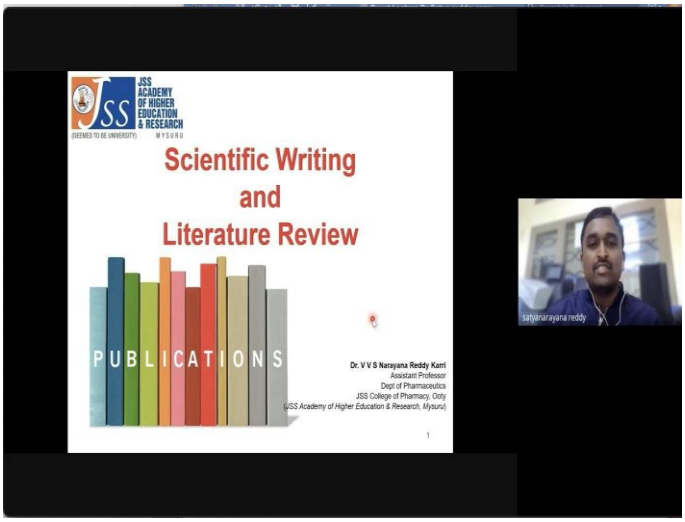
Dr Khayati Moudgil welcomed the speaker and briefed about the importance of Scientific writing and Literature Review in today's world.

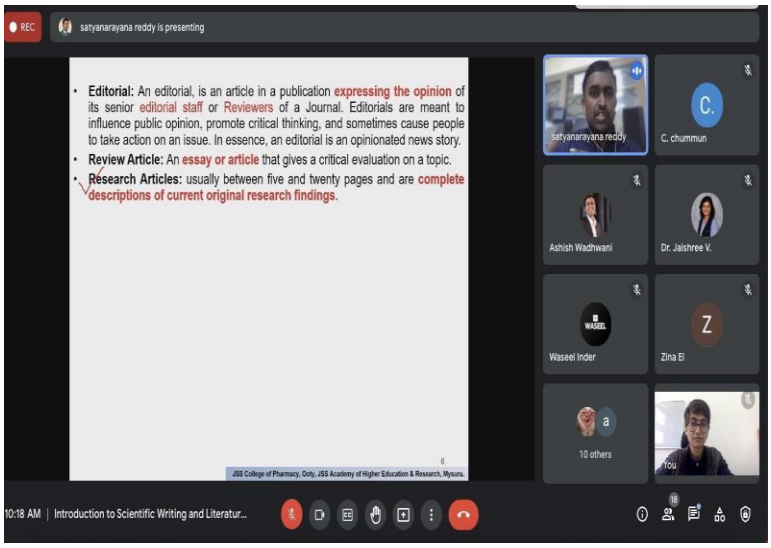
Dr Reddy in his lecture covered various aspects on why to publish, types of articles, types of journals, impact factor, indexing, peer review, etc.

The students thoroughly enjoyed and interacted well with the speaker. After the session the students showed their interest and enthusiasm to write the articles and publish in reputed journals.

Dr Ashish Wadhwani and Dr. Jaishree Vaijanathappa thanked the speaker for his time in engaging the students and giving them insights of scientific writing.

A glimpse of the session;





Report on Visit to Medical Centre:

Event 4: Visit to Sihha Medical Centre, Cassis, Mauritius on 7th July 2021

The one-day training session was organized at Sihha Medical Centre, Cassis, Port Louis for the benefit of the students.
The students learned about different biochemical testing and analysis on A25 biosystem instrument which measures biochemical and immunological parameters.
The training was mainly organized to familiarized the students with the high-end instruments used in the pathology laboratory and field training was given to the students.

The following experiments were performed during training.

- Estimate the creatinine level in the blood
- Determination of total cholesterol in serum and
- Determination of the enzymatic hydrolysis of glycogen by salivary α- and β- amylase

Dr Ashish Wadhwani, Professor & Head, School of Pharmacy, JSSAHER and Mr Shakeel Joomun, Chief Executive Officer, Sihha Medical Centre coordinated the visit.
Mr Zubayr, Laboratory technician and Dr Abdoullah from Sihha Medical Centre very well explained about various instruments and provided the training.
On behalf of JSSAHERM, students thanked the team Sihha Medical Centre for real time experience they had at Pathology laboratory.

A glimpse of the visit;

Event 5: Celebrations of 75th Independence Day of India on 15th August 2021

75th Independence Day of India was celebrated on 15th August 2021 between 9:30-10:00 a.m. at the premises of JSSAHERM. The Registrar hoisted the Indian flag, faculties and supporting staff participated in the event. Mr. Ravendra and Mr. Benjamin were the special invitees from Wellkin Hospital, Moka for the event.

Memorandums of Understanding / Agreement

Memorandums of Understanding

1. **JSSAHER, Mauritius and LA TROBE University**

   JSS Academy of Higher Education and Research, Mauritius and LA TROBE University, Australia signed Memorandum of Understanding on 17th December 2020.

   The institutions wish to engage with each other in a program of co-operation to explore;

   - ❖ New opportunities for collaborative teaching in pharmacy and biomedical science programs
   - ❖ Staff and student exchange programs
   - ❖ Collaborative Research projects

2. **JSSAHER, Mauritius and Sihha Medical Centre, Mauritius**

   JSS Academy of Higher Education and Research, Mauritius and Sihha Medical Centre, Mauritius signed a Memorandum of Understanding on 11th August 2021 to strengthen the collaboration between both institution and the center.

The institution and centre have collaborated to engage with each other in a program of co-operation to enhance capabilities of health professionals in Mauritius and in the region through academic and experiential learning for clerkship/internship for the students

Memorandum of Agreement

JSSAHER, Mauritius and Pharmacy Allusaib Company Ltd. Mauritius

JSS Academy of Higher Education and Research, Mauritius and Pharmacy AlluSaib Company Ltd., Mauritius signed a Memorandum of Agreement on 12th August 2021 to expose B Pharm / Pharm D / M Pharm (Pharmacy Practice) students for Community Pharmacy Practice and management such as procurement and inventory management, dispensing of medicines, Computer applications and pharmaceutical and patient care practices

JSSAHERM Faculty Research Publications

(January-August 2021)

1. Solomon Benny, Khaleelu Rahman, Narenthiran CK, N.Gowtham, **Dr Khayati Moudgil***. Prominent Role of Clinical Pharmacist in Intensive Care Unit. Journal of Hospital Pharmacy, 2021, 16(1):1-8.

2. Jemi Rachel Shaji, Bhagya Premnath, **Dr Khayati Moudgil***. Auto brewery syndrome: An alcoholic feel. International Journal Dental and Medical Sciences Research, 2021, 3(1):681-684.

3. Jerlin Anusha, Sumit Kumar Rai, **Khayati Moudgil***. An unusual case of DJ bending in adult men. International Journal of Biological and Pharmaceutical Sciences Archive, 2021, 1(1), 031-034.

4. Karur V. Uma, Gunasekaran Sutheeswaran, J. Vineth Martin, Mehda Gujadhur, **Khayati Moudgil***. An educational review on Probiotics. Current Issues in Pharmacy and Medical Sciences, 2021, 34(2):114-117.

5. **Khayati Moudgil***, Bhagya Premnath, Jemi Rachel Shaji, Indrajith Sachin, Samrin Piyari. A Prospective Study on Medication Errors in an Intensive Care Unit. Turkish Journal of Pharmaceutical Sciences, 2021,18(2):228-232.

6. Khatoon Juwairya Jafferally, **Dr Khayati Moudgil*,** Dermatitis: An educational review. Journal of Xi'an Shiyou University, Natural Sciences Edition, 2021, 17(7),248-259.

Patent filed

The JSSAHERM leadership, staff and students congratulates Prof. Dr Ashish Wadhwani, Head, Faculty of Health Sciences, School of Pharmacy for filing Indian patent.

Invention:
A PROCESS FOR FABRICATION OF THE TRANSDERMAL DISSOLVING MICRONEEDLE PATCH FOR THE CONTROLLED RELEASE OF INSULIN

Inventors:
Ashish Wadhwani, Baishali Jana, Riyaz Ali Osmani, Sanket Jaiswal, Rinti Banerjee, Veera Venkata Satyanarayana Reddy Karri

Inventing institutions:

- JSS College of Pharmacy, Ooty, JSS Academy of Higher Education & Research, Mysuru, India
- School of Pharmacy, JSS Academy of Higher Education and Research, Mauritius (JSSAHERM)
- Indian Institute of Technology, Bombay, India

Application number: 202141033940 & TEMP/E-1/37563/2021-CHE

In brief, for transdermal drug delivery, dissolving microneedles are attractive as they are associated with improved patient compliance and safety. Furthermore, alternatives in case of subcutaneous injections; dissolving microneedle (DMNs) patches that were fabricated from modified sodium carboxymethyl cellulose (CMC) and gelatin were prepared for transdermal delivery of insulin

It is the privilege for JSSAHERM in collaborating with prestigious Indian institutions for filing its first patent.

Upcoming Event

On the occasion of **World Pharmacist Day**, School of Pharmacy, JSS Academy of Higher Education and Research, Mauritius is organizing **Blood Donation Camp** in association with **Blood Donors Association Mauritius** at the premises of the campus on 25th September 2021 from 9:00 am onwards.

In this context, we cordially welcome you to the camp and donate the blood to save life.

EVERY DONOR IS A HERO
GIVE BLOOD…
GIVE LIFE…

Sponsorship

We acknowledge the generous sponsorship from Mittal Overseas who is the largest exporter, importer and manufacturer of laboratory glassware, laboratory plasticware and laboratory instruments

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Accreditation Council for Pharmacy Education (ACPE), USA

Grants

International Precertification for B.Pharm Program

(Bachelor of Pharmacy - 4 Years Program)

Accreditation Council for Pharmacy Education

Certifies that the
Bachelor of Pharmacy Degree of
JSS Academy of Higher Education and Research Mauritius
School of Pharmacy
has fulfilled the Precertification requirements set forth by ACPE for the Professional Degree Program in Pharmacy and Precertification is hereby granted through June 30, 2025.

Executive Director

Director, International Services

JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH MAURITIUS

Our Students…
Our Pride…

ADMISSION OPEN

For Clarifications/Feedback, Write
To:
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JSS Health & Education Newsletter

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