

Future Physicians for Change

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Poster Session Abstracts

Future Physicians for Change 2023

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The Effect of Advanced Age and Alzheimer's Disease Neuropathology on Levels of the Tight Junction Protein, Occludin, in the Brain Microvasculature. Ali Mirzazadeh

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The Effects Of The Post-Roe Era On Doctor-Patient Relationship

Mary-Cynthia Kosi Udoh

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Mary-Cynthia Kosi Udoh is a fourth-year medical student at Georgetown American University.

She serves as the current course director for the Advocacy Scholars Program and completed the Reproductive Health Scholars Program and is eager to use what she has learnt from attending this program and the opportunity as an AMSA National leader to highlight ways current and future health care providers can advocate for their patients, most especially for the underserved communities.

In the past, she has served as the parliamentarian for the Student Government Association, Secretary for her AMSA local chapter and currently serves as the President for her AMSA local chapter, where she fosters a sense of community to support medical students throughout medical school. She enjoys volunteering and organizing outreach events and is passionate about women's health, rural medicine and the underserved population. She inspires to bridge the gap between patients and quality, individualized, tailored healthcare.

When she is not doing Medicine, Kosi loves to watch series and movies, traveling, reading and a healthy dose of social media.

Abstract

Background: The reversal of Roe vs Wade on June 20th 2022 has once again thrown us into the dark ages. This made abortions illegal in many states and barred medical practitioners from participating abortion irrespective of health conditions. The effects on maternal health and socio-economic factors are significant but from the lens of medical ethics, an important effect is the impingement of the patient-doctor relation. This study aims to review the present literature and narrow down the impacts of the overturn of Roe on doctor-patient relations. To establish positive correlation between the legislation and negative impacts on this crucial relation.

Methods: The study is a retrospective literature review. PubMed and Google scholar were the two databases used to conduct the literature search. Keywords include "Roe vs. Wade" along with words like "Doctors", "Mothers", "Relationship", "Impact", "Ethics" and "Concerns" separated by AND operator in different combinations. The inclusion criteria were based on relevance and language. Articles that included the term Roe vs Wade along with any one of the secondary terms were selected and abstracts were studied to ensure relevance. Issues related to doctor-patient relations were highlighted and discussed here.

Results: 70 articles were found that included the word "Roe vs Wade". 15 articles met the inclusion criteria which discussed the abortion or doctor-patient dilemma with relevance to the study and were studied for their view of the issue. The major problems related to doctor-patient relationships that were highlighted include the following: Risk of litigation for the practitioner, stigmatisation and

invasion of privacy, delayed access to healthcare, lack of definitive protocols and guidelines for the practitioner to follow, restriction on healthcare provision, patients distrust, healthcare providers relocation causing healthcare and maternal care deserts. Post Roe era is a rerun of the 19th-century conditions. In addition to the irrefutable impacts of the law on the health of women, the impacts on the medical practice and doctor-patient relationship were also significantly affected.

Conclusions: The situation created by the overturning of Roe creates a host of problems for the practitioner in particular regards to their relationship with the patients on the topic of abortion. Literature review shows that delayed treatment, damaged trust, invasion of privacy, and stigmatization affects the patient and their healthcare. While litigation, lack of protocols, and the dilemma on choosing between the patient and the law are issues posed for the practitioner. These problems affected the dynamic between patients and doctors.

The American Medical Student Association Premedical Research Project to Evaluate Access to Resource Barriers.

Tyra-Lee Brett, Jordan Shrader, Senya Huda, Luke Jouppi, Raneem Ammar

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Tyra-Lee Brett is an immigrant from Johannesburg, South Africa. She is a Biomedical Sciences major that attends the University of South Florida. Tyra's passion is serving the underserved and creating long lasting impact! Tyra is a volunteering at the Tampa VA and has an undergraduate research job, where she is currently developing clinical trials in pain management strategies to combat the opioid epidemic. Tyra has combined her love for research and advocacy to design projects to enhance the access to premedical resources for underprivileged students.

She loves all things sports as she is a Japanese-recognized Black belt in Karate and has represented South Africa at two world championships. She is also the founder of an online Personal Trainer company

Abstract

Background: Every year 60,000 premed students apply for a seat at a medical school. Yet, 50% of students do not have a successful application cycle. For generations, all premed students have struggled to find the necessary resources needed for applying to medical school. Especially students with diverse backgrounds. An AMSA project conducted in 2022 at Hillsborough Community College found their students have a significant lack of information and resources needed for applying to medical school. The current project was an expansion of the 2022 project to access the access students have to needed resources and experience for a medical school application. Focusing on underrepresented students in medical school. The project currently has been completed at three institutions, is being completed at three and we are still in four IRB processes.

Methods: The AMSA Premedical Trustee and Research PI, Tyra-Lee Brett, began with gathering a literature review to understand the most essential parts of the medical school application cycle. The electronic google doc survey was constructed. The Google document survey will place survey results directly into a spreadsheet. Each school went through their institution's IRB process. The survey was then administered to premedical students older than 18 years during the 2022-2023 year across ten institutions in multiple states across the country. The results of the survey will be submitted to Faculty at the institutions to insure student privacy.

Results: As of February 6th, over 300 students have taken the survey. Our data shows 84% of students are highly committed to attending medical school. However, results show students are lacking knowledge or experience in most of the categories. On average 77% of students have basic or less than basic information about the need requirements for the cycle and 30% of students have no access to experiences. The data showed that racial minority students, first-generation and immigrant students lack the most resources and ability to get experience. Additionally, AMSA members had a higher understanding and more experience than non-AMSA members.

Conclusion: The project is still ongoing. Thus far, the results show our students have a significant lack of information and resources needed for applying to medical school. Especially in underrepresented students. This project will be followed by a project to provide schools with a free learning Initiative.

We hope the results will aid AMSA chapters and the institution's academic advisors in more effectively educating Premedical students and improving retention of underrepresented students.

Increasing Medical Student Discussion on Abortion Care through Values-Based Education

Eshita Garg, Adjoa Cofie

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Eshita Garg (she/her/hers) is a second-year medical student at Wright State University Boonshoft School of Medicine. Her interests include advocacy, DEI, global surgery, and public health.

Abstract

Background: Medical schools often integrate knowledge of the reproductive system during pre-clinical years and a required obstetrics and gynecology clerkship during clinical years. However, abortion education is not embedded within the curriculum, especially with the recent overturning of Roe v Wade. We attempted to develop a toolkit for medical students across the country to engage in conversations regarding abortion stigma and recognize their own biases, by gaining awareness towards values-based education.

Methods: The toolkit was developed to guide conversations about abortion care in the medical setting in a respectful manner, regardless of a student's beliefs. The first part of the toolkit includes a glossary that defines terms attached to abortion, reproductive health, and laws and legislation. The main focus of the first part is to educate students on what abortion stigma is and the impact and consequences future physicians hold on distributing improper knowledge to patients. The second part of the toolkit includes the Stigmatizing Attitudes, Beliefs, and Actions Scale (SABAS) which allows students to take a scored questionnaire and recognize their abortion stigma. This portion also includes values exercises and case studies to help individuals understand their own beliefs and then set aside those beliefs to constructively dissect each patient case with fellow classmates. The third part focuses on wellness and encourages students to engage in different self-care activities because having difficult conversations can cause distress, especially during ever-changing times. This toolkit was then distributed to medical students and a discussion forum was held among students and physician faculty members to participate in these exercises and build upon conversations.

Results: A total of 25 medical students in their M1-M4 years participated in this optional one-hour session. Two physician faculty members who are practicing gynecologists and abortion providers participated in the forum. The discussion focused on 30-minute conversations about two "made-up" case studies: 1) denying care to a woman who has to seek medical intervention in a neighboring state, and 2) a pregnant teenager who requires parental consent for the procedure.

Conclusions: Medical students were given a voice to speak out concerns, raise questions, and learn how to converse with patients about abortion care using values-based education. Students felt comforted and optimistic, and more understanding of how practicing physicians provide care for patients, despite blurred lines. In the future, this toolkit will be distributed to more medical schools due to the success of the pilot discussion forum.

Atypical Behcet Disease presenting with neuropsychiatric manifestations

Isabella Mella Bonilla, Karla Garcia, Maria Jose Contreras Castillo, Marianne Scharf Ferrúa

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

MS4 at Universidad Iberoamericana (UNIBE). Current coordinator of the student group FAMSAPAL of the Universidad Iberoamericana (UNIBE). Member of the American College of Physicians. Member of the American College of Pediatricians. Member of the Board of Directors of the Obstetrics and Gynecology Interest Group of the Universidad Iberoamericana (UNIBE) in 2021. Active member of the Honey Heart Group in 2020, recognized for promoting social work and medical research in the Dominican Republic. Member of different interest groups of the UNIBE Faculty of Medicine, such as Internal Medicine, Cardiology, Pediatrics, Dermatology, Gastroenterology and Neurology. I consider myself responsible, disciplined, capable of teamwork and always willing to learn new things.

Abstract

Background: Behcet disease is an autoinflammatory systemic vasculitis. It is characterized by genital and oral ulcers, ocular manifestations such as anterior or posterior uveitis, painful joint swelling, and acne-like sores. This condition can involve arteries and veins of all sizes, which accounts for its multisystem involvement, making the diagnosis and management challenging. Central nervous system involvement is rare and may cause difficulties in identifying Behcet as the leading cause, due to other etiologies presenting a similar clinical picture. We present a case of Behcet disease with neuropsychiatric involvement, along with the management and patient outcomes.

Methods: Not applicable

Results: A 27-year-old female comes to the office due to recent polyarthralgia, generalized myalgias, and genital and aphthous ulcers. Medical history is significant for Behcet's disease, after meeting the pathology's diagnostic criteria mid-year 2022, repeated headaches and mild chronic depression diagnosed at the age of 25, recurrent nonspecific symptoms of colitis, aphthous and genital ulcers from the age of 14, as well as periodic episodes of folliculitis in the knees, thighs, buttocks since early adolescence. Electromyography was conducted in 2018, exhibiting mild, mixed, sensory-motor axonal demyelinating polyneuropathy of all four extremities, results consistent with a repeated study performed in 2022. Laboratory results of February 2023 were notable for Hb 11.6 mg/dL, VCM 90.6, platelet count 448,000/mm³, and a rise in AST from 23 U/L to 45 U/L and ALT from 23 U/L to 47 U/L within four months. Due to the presence of neuropsychiatric characteristics, the diagnosis of Neuro-Behcet, although rare, was presumptively diagnosed.

Conclusion: Despite negative HLA-B51 results, the patient meets the clinical criteria of Behcet's Disease. The mild chronic depression, recurrent headaches, and facet synovitis present at all levels of the lumbar spine may correspond to Neuro-Behcet. With little or no response to treatment with steroids, methotrexate, and azathioprine, the initiation of biological agents is recommended, since the few publications that discuss this pathology denotes to infliximab, etanercept, and adalimumab as being the most used drugs. The rapid identification of Behcet disease in patients presenting with neuropsychiatric involvement is crucial in the prevention of this pathology's clinical deterioration. Conducting a throughout clinical history, examination, and investigation is necessary for determining the need for additional measures in patients with this condition.

Chromomycosis of atypical location

Isabella Mella

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Fourth year medical student at Universidad Iberoamericana (UNIBE).

Abstract

Background: Chromomycosis is a chronic entity caused by dematiaceous or pheoid fungi of the genera *Fonsecaea*, *Cladophialophora*, *Phialophora*, *Rhinochrysiella* and *Exophiala*. *Fonsecaea pedrosoi* is the most common etiological agent in the Dominican Republic. The fungi can be isolated from wood, plant debris, or soil. It manifests as erythematous squamous nodules and plaques, with a slow-growing verrucous appearance that have black dots on their surface, with the verrucous variety being the classic form of presentation. It usually occurs mainly in the lower limbs, and may have atypical presentations on the face, trunk, and buttocks. We present three cases of chromomycosis of exceptional location in the auricle and their therapeutic responses.

Results: The three clinical cases discussed affected the left auricle, an atypical location for this pathology. The most frequent cutaneous manifestations found were plaques with a verrucous appearance. On direct examination, the parasitic forms of fumagoid cells, which are the Medlar bodies, were observed. Culture performed on Sabouraud glucose agar isolated the fungus. On histopathology, the epidermis exhibited hyperkeratosis, collection of neutrophils, and acanthosis with pronounced, irregular elongation of rete ridges; the superficial and deep dermis displayed a dense infiltrate of neutrophils forming microabscesses with multinucleated giant cells, sclerotic or fumagoid cells. Combination therapy with oral antifungals, cryotherapy and local heat demonstrated remission of these lesions.

Methods: Mycological samples from the left auricle of three patients were submitted to direct examination, histopathology, and culture.

Conclusion: These clinical cases corroborate the need of new evidence-based medical literature on rare, atypical locations of chromomycosis, as there are limited studies on auricle involvement. This study validates the importance of suspecting this pathology even in unusual locations, especially in patients with risk factors such as agriculture and livestock, who reside in rural areas of tropical and subtropical climates. Although patients are generally immunocompetent, diagnosis is suggested by occupational activities and clinical presentation. These lesions, when small, can heal relatively easily if diagnosed early and before centrifugal expansion develops, thus reducing the complications that patients may present such as infections, lymphedema, and malignant transformation to squamous cell carcinoma. Combination therapy is the best method of approach due to the fungi's resistance with monotherapy and the gradual improvement of the lesions.

A Descriptive Analysis of the Patient Population Served by a Student-run Community Health Fair

Miracle Oparah, Favour Abidoeye, CeJay McCalla, Nnenna Osagwu, Dr Olha Puzyrenko

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

I am an MS2 student at All Saints University School of Medicine, Dominica. Currently serving as the chapter president of AMSA in my school's chapter.

My research started at the Department of Pediatrics at Ternopil National Medical University, Ukraine, where I focused on thyroid dysfunction in the Caparthian regions.

I am an Internal Medicine hopeful, with research interest in disease epidemiology, community medicine, and population epidemiology.

My hobbies include gaming (currently working my way through God of War and Elden Ring), tutoring, and anonymous writing.

Abstract

Background: The annual health fair organized by members of our student body has grown exponentially over the past three years. Our fair serves as a first contact for community engagement while raising health awareness in our community. Data gathered during these exercises allows for a better understanding of our patient population, proper planning towards future fairs, improved intervention efforts, advocacy, and increased patient satisfaction.

Methods: Data were collected from patients at the 2022 annual health fair using forms administered by volunteer medical students. A total of 45 patients were included in the study. The patient analysis included basic demographic information, past medical conditions, family health history, alcohol and substance use, covid-19 vaccination status, and surgical history. Statistical analysis was performed using the IBM SPSS 25 software.

Results: 35.6% of patients identified as male and 64.4% as female. The average age was 53.94±13.21 for males and 44.21±19.77 for females. The average blood pressure was 133.08±14.20/81.23±6.56 (mmHg) for males and 121.12±12.61/79.56±10.30 (mmHg) for females. BMI averaged at 26.33±5.42 for males and 29.42±7.54 for females. Average Random Blood Glucose (RBS) for males was 118.15±24.64 (mg/dl) and 128.67±50.26 (mg/dl) for females. 60% of participants reported at least one diagnosed past medical condition, with hypertension and diabetes being the most prevalent conditions. Childbirth was the most common reason for hospitalization. Cesarean sections were the second most common reason for surgery after appendectomies. 53.3% received at least one dose of vaccine against Covid-19. A family history of hypertension, diabetes, asthma, heart disease, malignancy, psychiatric disorders, and renal disease was found in 62 %, 47 %, 40 %, 16 %, 29 %, 11 %, and 4% of participants, respectively. 48% of females had received at least one pap smear in the last five years. Condoms were the preferred choice for contraception in all sexes. Allergies to peanuts, penicillin, and seafood are the most prevalent. 60% of participants reported alcohol and caffeine use, 0.1% reported tobacco and marijuana use respectively, and one participant reported cocaine use. The most common reason for attending the health fair was routine screening.

Conclusion: This study provided population data that were drawn to implement changes in our health fairs such as tools to help patients identify their risk factors for certain conditions, especially for prevalent conditions and where to seek appropriate care. Overall, this study highlights the importance of integrating data-driven measures to improve the effectiveness of health services.

Specialty Speed Dating on the Road to Residency: a Pilot Program for Early Exposure to Medical Specialties

Kristen Waters, Lois Nguapa

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Kristen Waters is a current third-year medical student at the Wright State University Boonshoft School of Medicine. She has served on her AMSA chapter as both the Director of Special Events and Vice President. She is passionate about preventative medicine, academic mentorship, and training the next generation of well-rounded and diverse physician advocates. In her free time, she is an avid reader, a triathlon athlete, and runs her very own baking Instagram (check her out @KristysCookieQuest)!

Abstract

Background: Traditional medical school curriculums involve up to two years of classroom learning with little early specialty or physician exposure. Education literature has shown that previous experience with a specialty is one of the strongest predictors of medical student specialty choice and that specialty-specific attending and resident physicians serve an important role in making this decision. We designed a pilot feasibility program to increase early medical student specialty exposure by virtually speed dating with resident and attending physicians.

Methods: The speed dating style of mentorship inspired by programming from Vanderbilt University's Careers in Medicine Department, with a virtual twist. Students were recruited from the Boonshoft School of Medicine AMSA chapter and indicated their current top specialty interests. After a brief introduction, students were assigned to 4, 5-minute dates with residents, fellows, and attending physicians and were later able to return to specialties of particular interest for further discussion. Career choice resources and a feedback survey were administered following the event.

Results: The event represented 26 specialties and hosted 41 medical student participants, the majority of which were first-year students. Feedback surveys reported overall positive reflections of the event, including the student's overall experience, their satisfaction with the number of "speed dates" and the quality/quantity of speakers, the degree of event helpfulness, and if they would attend the event in the future. At the end of the event, students were either open to many specialties, interested in 2-3 similar specialties, or interested in 2-3 very different specialties. Suggestions for future events centered around the organization and timing of the event. Participant feedback confirmed that there were some technical issues with virtually switching rooms between dates and that 5 minutes with each provider was not enough time for conversation.

Conclusions: The planning of the pilot Road to Residency: Specialty Speed Dating program provided an important framework for an early specialty exposure program in medical education. Student feedback indicated an overall enthusiasm and appreciation for specialty exposure through speed dating. Future events will incorporate changes from the feedback survey as well as modified event questions to assess the impact of this method of specialty exposure on medical student specialty choice.

Med School Made Easy: A Pilot Program for Pre-Med Mentorship

Sreya Brahmandam, Katherine Ji, Kristen Waters

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Sreya Brahmandam is a current second year medical student at Wright State University Boonshoft

School of Medicine. She completed her MSBS-Medical Sciences at University of Toledo and will be

completing her MPH through Youngstown State University/ The Consortium of Eastern Ohio in spring

2023. She graduated Summa cum laude from Youngstown State University with Honors B.S. in Biology

and minor in Chemistry. She has been involved in AMSA since graduating high school and served as Vice

President for the YSU chapter. She currently is the Co-Director of Membership and Mentorship for

AMSA at WSUBSOM. She is also the President of the Internal Medicine Interest Group and the

Community Outreach Director for the Academic Medicine Group. She is passionate about teaching and

has been involved in several leadership roles, such as Emerging Leaders Program where she was elected

to by peers and faculty as school leader organizing student run community service projects. She took

active roles in organizing projects raising awareness for mental health and food deserts in underserved

areas. She enjoys teaching students and mentors premed undergraduate students to get more involved

in medical school activities and AMSA. She is a strong advocate that voices should be heard and

together students can create a positive change for patients and field of medicine. She is involved in

clinical research and has presented several cases and retrospective studies at international meetings in

Cardiology, Pulmonary/Critical Care, and Internal Medicine. She enjoys spending time with family and

spends her free time honing her musical skills in Indian Classical vocal and violin.

Abstract

1. Background

Mentorship is a collaborative and supportive relationship where knowledge and firsthand experience can be passed on. Research has shown that 59% of medical students felt that they did not have enough mentorship prior to medical school. 1To help bridge this gap, a framework mentorship

conference was developed to assist pre medical students in the early parts of application to medical school.

2. Methods

The conference was designed to bridge gaps in knowledge between pre-medical students and medical school admissions teams in a virtual, accessible platform. Current medical students were recruited from the Boonshoft School of Medicine AMSA chapter to formalize their experiential knowledge related to medical school applications. Pre-medical students across the US were invited to talks of their choosing and submitted questions to current students and admissions counselors. Following the conference, a summary document was provided to attendees and an optional feedback survey was administered.

3. Results

The conference had 142 participants from many different universities across the US. The feedback survey had two key points of data that were important for the future of this conference which included "How likely would you recommend this type of conference to a friend", 83.3% of participants saying most likely, and "Are you interested in being mentored by a medical student from Wright State?", 100% of the audience said yes. The topics for this conference ranged from personal statements to a day in the life of a medical student. The type of questions that participants asked to both students and admissions included "What is the typical day for a medical student?", "How should I begin my personal statement?", and "What are some interview tips?"

4. Conclusions

Our hope is that by thoroughly documenting the development of this program, it can serve as a template for other medical schools to provide a similar opportunity for pre medical students in their area. By covering broad topics and having speakers from different application backgrounds, we were able to engage a wide range of students. We plan to follow up with students to request feedback on how this program was helpful in their application process and areas for improvement. In the future we would like to ask students to submit questions in advance to ensure we cover the most common concerns.

Puppy Videos: Impact on Human Internal Conditions

Julia Meguid

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Julia Meguid recently graduated from the University of Michigan with a bachelor's of science degree, majoring in Psychology, Cognition, and Neuroscience and minoring in Writing. This project was orchestrated during her Research Methods course at U of M. Julia is currently applying to medical school, with the hopes of becoming a physician. She is a lab assistant at the Hammoud Lab, which studies infertility and genetics. Julia is also a member of Phi Delta Epsilon, a premier medical fraternity. She also works as a medical assistant, with the goal of being an advocate for all of her patients.

Abstract

Short video media, as well as mental health awareness, has increased in popularity in the United States. While there have not been many studies conducted on the effects of puppy videos on well-being, findings have shown that watching a short puppy video can increase mood and decrease stress level. The current study also aimed to evaluate whether energy level is also influenced by puppy videos. Participants (N = 85) were recruited through MTurk and randomly assigned to one of two conditions: either a ten second video of a puppy or a ten second video of static. Afterward, participants answered the same questions measuring their mood, energy level, and stress level, as well as demographic information. Participants that watched the puppy video reported more positive moods and lower stress levels. However, there was no significant difference in energy level found. These results have positive implications for social media usage; short puppy videos can be used to better mental health.

Keywords: puppy, video, energy level, stress level, mood, mental health, social media

Debridement, Antibiotics, and Implant Retention (DAIR) For Prosthetic Joint Infection: Considerations for Success

Caleb Gerber, Sabrina Khuder, Dr. Jiayong Liu

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Caleb Gerber is a current third-year medical student at the University of Toledo College of Medicine and Life Sciences. He completed his Bachelor of Science in biology, followed by his Master of Business Administration from Heidelberg University in Tiffin, OH. He is attending medical school under a four year scholarship by the US Army Health Professions Scholarship Program. He is interested in pursuing a career in orthopedic surgery following graduation, with an eventual fellowship in sports medicine or pediatrics.

Abstract

Prosthetic joint infection (PJI) is the most serious complication that may occur after joint replacement. Among the treatment options, debridement, antibiotics and implant retention (DAIR) is less invasive than staged revision, and comes with lower costs and shorter hospital stays. However, the success rate has been reported from 0% to 100%, based on numerous factors. In this project, we conducted a review of the available literature in order to isolate and identify key factors that impact the success or failure of a DAIR procedure. Based on these factors, we provide suggestions that surgeons may take into consideration prior to, during, and following the operation, in order to maximize their success.

Role of Public Relations in Engaging Students with the American Medical Student Association at Boonshoft School of Medicine (AMSAXBSOM)

Amber Prater, MD Ann Burke

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Amber Prater is an dual doctoral-MPH candidate at the Boonshoft School of Medicine. She is the current senior clinical director of Public Relations with Boonshoft's American Medical Student Association and a strong healthcare reform advocate.

Abstract

In 2020, our American Medical Student Association (AMSA) recognized a lack of engagement with our students. Thereafter, we launched a new public relations (PR) department to start a website, manage social media pages, and generate event flyers. The department continued to grow and is now one of the first AMSA chapters in the USA to have a robust PR department with national recognition. Despite this recognition and continued growth, there is no objective evidence that the PR department has increased engagement with students. For this study, we are testing the hypothesis that when the PR department is more active, there will be more engagement with our AMSA chapter. Engagement will be assessed by event attendance, website views, and social media views. PR department activity will be measured by the number of social media posts, flyers produced for an event (Yes/No), and use of the website. Comparison of means analysis and regression models will be used for analysis. We expect that data analysis will reveal the activity of the PR department to significantly increase engagement. While there have been previous studies assessing the use of advertising to engage target audiences in a political or business setting, to our knowledge, there have been no studies assessing the impact of marketing from student organizations on student body engagement, making this study a first of its kind to guide student leaders in growing their organizations (1-4). Limitations to this study include factors impacting engagement out of the control of AMSA including personal engagements, upcoming exams, and other co-occurring events. This study is only representative of one organization at one school. While a good first step, it is only a stepping stone for student leaders to understand how PR can help the growth of their organizations.

Assessing the Efficacy of Novel Beta-Cyclodextrin Derivates to Clear Lysosomal Content

Haya Alkiswani, Dr. Patricia Fontan, Dr. Marcelo Nociari

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Haya Alkiswani is a John P. McNulty scholar and a Macaulay Honors junior at Hunter College, where she is pursuing a Biological Sciences major with an English minor. Coming from a faith that emphasizes the importance of helping others in need, Haya hopes to pursue a career in medicine to combine her passion for restoring a patient's health and quality of life with her love for science and problem solving. Haya hopes to become a patient advocate and to serve diverse patients in a way that best meets their needs by expanding her knowledge in scientific research, narrative medicine, patient care communication, and sciences such as biochemistry, cellular biology, endocrinology, cancer biology, and genetics. In addition to her deep commitment to scientific research, Haya is also currently the Founder and President of the Project HOPE Club at Hunter College (affiliated with the Project HOPE non-profit global organization) and the Co-President of the Heart at Hunter Club (affiliated with the American Heart Association) as she strongly advocates for health equity, the provision of essential health needs in underserved communities, food security, and cardiovascular health. As a future physician and leader in healthcare, Haya hopes to be a voice for marginalized communities and plans to provide direct care for disadvantaged communities around the world as a physician volunteer for Project HOPE mission trips.

Abstract

Lysosomal storage disorders (LSDs) are a group of inherited metabolic disorders due to mutation either in lysosomal hydrolases or membrane transporters. Due to these deficiencies, lysosomes accumulate unprocessed substances, leading to multisystemic pathological symptoms and neurodegeneration. Neurodegenerative diseases, such as age-related macular degeneration (AMD), juvenile macular degeneration (Stargardt), and Parkinson's and Alzheimer's diseases share with LSDs the pathological accumulation of undigested material within the lysosomal system. Recent studies suggest that lysosomal exocytosis stimulation have beneficial effects on the accumulation of these unprocessed aggregates, leading to their extracellular elimination. Lysosomal exocytosis is normally induced with drugs that increase cytosolic Ca⁺⁺ levels or with transcriptional activators of the CLEAR network. Our lab discovered a new family of drugs, succinylated-cyclodextrin derivatives (SUCD), with extraordinary high lysosomal emetic activity that seems Ca⁺⁺ and transcriptional independent. The goal here is to understand the mechanism of action of these novel SUCD to optimize their therapeutic use and safety. Preliminary data from the lab indicates that SUCDs need to be in the acidic form for inducing the lysosomal exocytic response. Little is known about how acidity could affect lysosomal transport. Thus, our research is aimed to correlate how SUCDs affect pH to determine what is the triggering event and the subcellular compartment that needs to be reached by SUCDs to yield optimal outcomes. We work with cultures of retinal cells to harness their use for the treatment of AMD and Stargardt Diseases. Results show that SUCDs lower pH without affecting cellular viability. Furthermore, we found a dose-dependent trend between acidity and exocytosis of lysosomes. These results help provide preliminary data for further experimentation with these novel cyclodextrin derivatives.

Surgical Proposition for a Slow Growing Calvarial Exostosis in a Female Patient with Congenital Iris Cyst of the Anterior Chamber and Mandibular Tori

Bitu Crystal Behaeddin, Monica Ramos, Omar Jarrett

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Bitu Crystal Behaeddin is a third year medical student at SGU.

Abstract

A female patient in her early 50s presented to our institution with concerns of a slow growing mass on the left side of her head. She has a past medical history of iron deficiency anemia, lumbago with sciatica on the right side, mandibular tori, and a congenital iris cyst of the anterior chamber of the right eye. Her previous surgical history includes complete removal of the iris cyst a couple of months prior to presenting to us on this visit. Family history was unremarkable, except for the patient disclosing that her daughter had been diagnosed with Eagle syndrome and had also developed mandibular tori.

On physical examination, a hard, immobile mass was palpated over her left parietal bone. The patient denied pain or itching in regards to the mass. The mass was said to have appeared about two decades ago. She stated that the mass had started off small and slowly grew over the time period. Computed tomography without contrast of the skull revealed an ossified crescent-shaped 3.71 x 1.36 x 4.2 centimeter mass on the outer table of the left temporoparietal calvarium. The findings were consistent with a calvarial exostosis.

Exostoses are slow growing benign bone growths that extend out from the bone surface. Calvarial skull lesions can vary from benign to malignant. Due to the mass being identified in the outer table of the left temporoparietal calvarium without intracranial extension, this lesion was presumed to be benign. The treatment option of removal via a linear incision across the scalp and excision by cutting the base of the mass was offered.

To this date, there are no reports in the literature of a patient with concurrent calvarial exostosis, congenital iris cyst, and mandibular tori. Exostoses etiology are poorly understood, although genetic factors may play a role, as in this patient, whose daughter presents with similar mandibular tori. Mandibular tori are exostoses located on the lingual side of the mandible, often found incidentally with surgical resection being rarely necessary. It is important to mention that multiple exostoses are rare and may raise suspicion for conditions such as hereditary multiple osteochondromas, often resulting from loss of function mutations in the EXT1/EXT2 genes. One of the feared complications of exostoses is the formation of chondrosarcoma, which is why our team recommended surgical intervention for our patient. However, the rate of transformation from benign exostosis to chondrosarcoma has been estimated at 1-2%.

Dysregulation of macrophages EphB2 mitigates diet-induced obesity in mice - Poster Presentation

Daniel London, Ph.D Severin Donald Kamdem, Ph.D Patrice Mimche, Ph.D Erika Egal, M.D Gillian Hale

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

MS2 @ Meharry Medical College

Interested in Trauma or Cardiothoracic surgery with intention to practice in underserved rural areas.

Abstract

Background

Obesity is still on the rise especially in the developed world and constitute a major public health threat (1). Sterile inflammation and constitutive activation of pro-fibrotic cells in the stromal vascular fraction (SVF) of adipose tissue (AT) are hallmark of obesity (2). Macrophages and AT progenitors plays an important roles in the development and progression of this pathology in fat depots (3). The goad of this investigation is to test the hypothesis that defective EphB2 signaling in macrophages could potentially mitigate adipose tissue fibro-inflammation and insulin resistance in obesity.

Materials and Methods

Disease phenotyping was performed in males and females wild type (WT); EphB2KO (EphB2^{-/-}); leptin-deficient ob/ob mice and in EphB2 specific deletion in macrophages (Cre⁺). Mice with EphB2-specific deletion in macrophages were generated by crossing EphB2-flox/flox mice with CSF1R-iMer-Cre-iMer & CX3CR1-CreERT2. Mice were subsequently administered Tamoxifen by intraperitoneal injection for 5 consecutive days and placed on diet after 2 weeks washout period was observed. Mice were fed the obesogenic Gubra-Amylin NASH (GAN) diet for 6-26 weeks. Weight was recorded and glucose tolerance test (GTT) and Insulin tolerance test (ITT) performed. Mice were euthanized at the end of the study via isoflurane anesthesia in nonfasted state; liver tissue, inguinal white adipose tissue (iWAT), brown adipose tissue (BAT), epididymal white adipose tissue (eWAT) and heart were collected and weighed. Histology (H&E, Masson-trichrome and phosphor-EphB2 immunohistochemistry) was performed in iWAT and eWAT. Stromal vascular fraction and adipocyte were isolated from iWAT and eWAT and subjected to flow cytometry, and qPCR.

Results

EphB2 receptors and EfnB ligands mRNA transcripts are upregulated in fat depots SVF of ob/ob mice.

EphB2^{-/-} mice displayed a reduced weight and improved glucose tolerance when fed an obesogenic diet compared to EphB2 wild type mice. Deletion of EphB2 in macrophages reduced weight gain and metabolic syndrome in DIO (diet induced obesity) mice. In macrophage specific knockout showed diminished quantity of pro inflammatory M1 macrophages with increased M2 macrophages and polymorphonucleated neutrophils evaluated through flow cytometry.

Conclusion

EphB/EfnB mRNA transcripts are upregulated in fat depots of obese mice and more specifically in the stromal vascular fraction of iWAT and eWAT. EphB2 signaling is activated in the stromal vascular fraction of eWAT. EphB2 deficiency mitigates weight gain and improve glucose tolerance in DIO mice. Deletion of EphB2 receptor in macrophages reduces weight gain, improve glucose tolerance and dampened inflammatory response in DIO in mice.

Behçet Syndrome, in the Dominican Republic: A case series report

Maria Jose Contreras Castillo, Hector Lora, Marianne Scharf, Eusebio Burgos, Amelia De Pena, Karla Garcia, Jenny Cepeda-Marté

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

MS4 at Universidad Iberoamericana (UNIBE). Current interest groups coordinator of the UNIBE medical students association (AEME). Member of the American College of Obstetricians and Gynecologists. An active member of the American Medical Student Association (AMSA) UNIBE Chapter. Past coordinator of AMSA UNIBE Chapter FAMSA PAL subcommittee 2021-2022. Also member of different interest groups in UNIBE such as OB/GYN, Cardiology, Internal Medicine, Nutrition, and Emergency Medicine. I consider myself hard-working, responsible, honest, and committed to giving my 100% to others in the field of medicine.

Abstract

Background: Behçet's Syndrome (BS) was first described in 1946 as an autoimmune and inflammatory disease characterized by recurrent painful oral ulcerations. It has a low prevalence of 80-370 cases per 100,000 in which is highest in Europe and Asia, especially in what is known as the Silk Road; BS is extremely rare in the Dominican Republic (also underdiagnosed); likewise, there is not enough reported data of this disease in Latin America, this led to the main purpose of this study: contribute to the literature of BS in the Latin America region.

Methods: An observational analysis was carried out with patients that suffer from BS that attend a specialized clinic in Santo Domingo, Dominican Republic. Participant data was collected from medical records.

Results: A case series with 5 patients with BS was conducted in which several similarities and differences were identified. 4 out of 5 cases of BS were female patients, with a mean age of diagnosis of 42.8 years old (y/o), the youngest age being 29 y/o and the oldest age 66 y/o. In regards to signs and symptoms of the disease, 2 out of 5 had the presence of aphthous ulcers, genital ulcers, sacroiliitis and uveitis, one being classified as acute anterior uveitis and the other one as acute granulomatous anterior uveitis. 1 out of 5 evidenced cutaneous lesions. Concerning laboratory parameters, all of the patients were positive for the HLA-B51 allele, with one of them also being positive for the HLA-B27 allele. The D-dimer was elevated in 1 patient with a value of 962 ng/ml. The C-reactive protein was elevated in 3 out of 5 patients and the erythrocyte sedimentation rate was also elevated in 2 out of 5 patients. The Antinuclear Antibodies (ANA) were positive in 2 of the 5 patients, and thrombocytosis was reported in 1 of the 5 patients. Pertaining to management, 1 of the patients was treated with colchicine, 3 were treated with corticosteroids, immunosuppressants, and anti-TNF alpha monoclonal antibodies, which were well tolerated.

Conclusions: Behçet Syndrome is present in the Dominican Republic. Predominance of female sex and positive HLA-B51 allele were common among all cases. A marked difference could be observed in the presentation of signs and symptoms in each patient. Also, inflammatory markers were elevated in most of the patients. Corticosteroids, immunosuppressants and anti-TNF alpha monoclonal antibodies seem to be effective in this population.

Determination of adherence to antiretroviral therapy in the population of men who have sex with men and transgender women with HIV during the period October 2021 to October 2022 in Clinica de Familia La Romana, Dominican Republic

Jokeyni Lorenzo Tvarez, Neyshkalisse Pérez Muriel, Jetsabel Castillo Benitez

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Jokeyni Lorenzo is a 4th year medical student. She was born in the Dominican Republic and immigrated to the United States at the age of five. She is passionate about helping people and from an early age discovered her interest in the medical field through a program called Lang Youth Medical Program. She obtained a Bachelor's degree from Barnard College of Columbia University and soon after began her medical school journey at Instituto Tecnológico de Santo Domingo.

Abstract

INTRODUCTION: In the Dominican Republic, men who have sex with men, (MSM), have an HIV prevalence of 4%, and transgender women 27.7% (1). These vulnerable populations have a decreased adherence due to scarcity of resources and stigmatization of infectious diseases and their sexual preference. Therefore, non adherence should be acknowledged as a public health issue, emphasizing that medication adherence is indispensable for achieving clinical goals such as viral suppression.

OBJECTIVE: To determine the level of adherence to antiretroviral therapy, (ART), in the population of MSM and transgender women users of the Comprehensive Care Service of La Romana Family Clinic.

METHODOLOGY: This was a cross-sectional study. It was conducted with a sample size of 206 patients who met the inclusion and exclusion criteria. The data was obtained using four adherence measurement tools created by the La Romana Family Clinic. Adherence to ART therapy was measured by percentage coverage of prescribed ART, ART collection at the pharmacy, viral load level, and self-reported adherence. The statistical test used was Fisher's exact test.

RESULTS: Out of 206 patients, 166 (80%) were considered adherent, 28 (14%) semi-adherent, and 12 (6%) as non-adherent. ART therapy coverage was greater than 90% in 167 patients (81%). 181 (88%) picked up ART therapy from the pharmacy the same day it was prescribed. 181 (88%) were considered to have good adherence. Fisher's exact test reported statistically significant associations between levels of adherence and the four adherence measurement tools, however, age was not statistically significant when compared to levels of adherence.

CONCLUSIONS: Based on the results, MSM and transgender women were mostly adherent. Adherence is a process in which a series of factors influence such as: culture, economy, cognitive and social. It is possible that the high levels of adherence in the Family Clinic of La Romana are the product of easy accessibility to resources, obtaining ART free of cost and access to ART immediately after their appointment, carried out in an inclusive and stigma free environment..

RECOMMENDATIONS: Implement support groups for the vulnerable population, promoting adherence through educational materials and regular monitoring of compliance to medical therapy.

Functional Neurological Disorder (Conversion): A Clinical Application of Occam's Razor

Gurkaran Singh, Sahajpreet Singh, Robbin Singh, Dr. Burton Tabaac

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

My name is Gurkaran Singh. I am a first year medical student at the University of Nevada, Reno School of Medicine. I was born and raised in India and moved to the US in 2011. I completed my undergraduate education at UNR with a major in Biology and a minor in Mathematics. I am interested in neurology because I find the brain to be a very fascinating organ. Additionally, neurological disorders are some of the most disabling, difficult to treat and complex diseases known in medicine. Hence, I am very interested in advancing the research and my own knowledge in this area because of my natural curiosity and a desire to help patients with such disorders.

Abstract

Introduction: Conversion Disorder, also known as Functional Neurological Symptom Disorder (FND), is a rare psychiatric disorder manifesting as sensory or motor dysfunction presenting in an inconsistent fashion compared to known neurological disorders. Although the condition is pseudo-neurologic and there is no physiological basis to its symptoms, it can significantly impact a patient's ability to function. FND is typically linked to a trauma, an adverse life event, or a chronic stressor that precedes the symptoms of FND. A history of childhood abuse, psychological factors such as poor coping skills, and psychiatric disorders, including depression, exacerbate FND. Patients routinely express disbelief towards the involvement of psychiatric factors in their disease course. First line treatments for FND include IV haloperidol and midazolam, with haloperidol being associated with higher success in treatment.

Case: A 39 year old with a past medical history of hypothyroidism, dyslipidemia presented with left sided headache, weakness and dysarthria for 10 days. She reported increased emotional stressors in her life relating to family illness and social anxiety. The patient reported no complaints of acute changes in vision, lightheadedness, or vertigo. CT imaging of the head and neck were performed and revealed no acute processes. An MRI was completed, which showed no signs of stroke. Additionally, all labs including CBC with diff, Procalc, CRP, and Sed Rate were unremarkable. After an evaluation by neurology, a psychological etiology of her symptoms was deemed most likely and a pending LP, ordered by the hospitalist on call, was cancelled. Additionally, her dysarthria was atypical in character and further suggestive of a psychological etiology as opposed to aphasia due to stroke. The patient was administered IV Midazolam during her admission, resulting in improvement of her dysarthria. She was discharged on a course of venlafaxine 75 mg qd, along with follow up with speech and therapy services, for the treatment of her FND.

Discussion: FND is a significantly burdensome illness, which has been identified in certain studies to affect 20-25% of patients in a general hospital setting. Despite being potentially widespread within the national healthcare system, clinicians are often inexperienced in understanding and diagnosing FND early in the patient's hospital course. This diagnostic error can contribute to more adverse patient outcomes secondary to an unnecessarily prolonged hospital course and an avoidable financial burden on the patient. Therefore, a solution is necessary to decrease the incidence of failed diagnosis of FND disorder.

Cancer Stem Cell Markers Are The Prognostic Biomarker In Follicular Lymphoma

Daniel Ashley, Dr. Theodor Borgovan, Dr. Hyung Sun Yoo, Dr. Xin Zhang, Ms. Samantha Ahrens, Dr. Qingyang Luo, Dr. Li Huang, Dr. John Cole, Dr. Li Li

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

CLOVIS HIGH SCHOOL

HIGH SCHOOL DIPLOMA

JUNE 5, 2014

- *Class Valedictorian*
- *Scholar of Academic Distinction*

CALIFORNIA STATE UNIVERSITY, FRESNO BACHELOR OF SCIENCE (B.S.)

MAY 19, 2018

- *Major: Biology*
- *Minor: Physical Science*
- *Magna Cum Laude with University Honors*
- *Cumulative GPA: 3.80 (USA Scale)*
- *Fresno State Smittcamp Family Honors College Presidents Scholar*
- *Honors Society of Phi Kappa Phi Member*
- *Top Dog Scholar*
- *National Society of Collegiate Scholars Member*
- *Fresno State Biology Honors Program*

CALIFORNIA STATE UNIVERSITY, FRESNO MASTER OF PUBLIC ADMINISTRATION (MPA) MAY 18, 2019

- *Cumulative GPA 4.00 (USA Scale)*
- *Distinction*

Cumulative GPA 5.944 (AUS Scale)

Abstract

PROJECT BACKGROUND: Follicular lymphoma (FL) is marked by a relapsing and remitting pattern, partly due to the intrinsic resistance of a cell subset of FL cells with cancer stem cell (CSC)-like activities (FL-SC). Despite recent advances in identifying clinical risk factors, there remains a need for prognostic biomarkers. In this study, our objective was to identify biomarkers that are reliable indicators of FL relapse and overall survival via high-throughput screening using tissue microarray (TMA).

METHODS: Pathology reports and electronic records of FL patients from 1982 to 2009 were examined to create an FL patient database. Corresponding patient biopsies were collected to create TMA for high-throughput IHC screening of putative FL-SC markers (ABCG2, Ki67, OCT3/4) and tumor marker CD20. Samples were grouped into patients with short survival (5 years) and long survival (≥ 15 years). Positivity was analyzed via digital batch processing method using Image-Pro software and microscopy.

RESULTS: 59 patients were partitioned into short- and long-survival cohorts, $n=26$ and $n=33$, respectively. IHC results showed there was no statistically significant difference in CD20 expression ($p=0.6378$). The markers are combined by weighted average where the weight for a certain marker is the correlation of the marker to the first principal component (CD20, as internal controls). We then compared each of the three markers (ABCG2, Ki67, OCT3/4) separately across the two cohorts and compared these markers in combination. The t-tests were then performed on the weighted averages. The results showed a significantly increased expression pattern for all 3 FL-SC markers in the short-survival group compared with the long-survival group, Ki67 ($p=0.0275$), ABCG2 ($p=0.0251$) and OCT3/4 ($p=0.0226$), as well as the combination of all three biomarkers ($p=0.0229$).

CONCLUSIONS: CSC populations are responsible for recurrence and metastasis with the help of the stromal environment. The prognostic biomarkers for FL-CS identified in this study may be used to distinguish those patients who are at greatest risk of relapse and in need of the most aggressive and novel therapies. Further investigation of the functional role of these biomarkers may obtain additional insight in the development of targeted regimens and treatment protocols to ameliorate outcomes.

Perceptions of Manual Vacuum Aspiration among Resident and Attending Physicians in Louisiana

Kelly Chau, Dr. Mirandy Li, Dr. Jennifer Robinson, Dr. Stacey Scheib

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Kelly Chau is a third-year MD/MPH student at the Louisiana State University Health Sciences Center in New Orleans. She graduated from Tulane University in 2020 with degrees in Cell and Molecular Biology as well as Public Health. Her study focus is behavioral and community health, with clinical interests in obstetrics and gynecology. She is passionate about reproductive health and justice, as well as sexual education access expansion. Her hobbies include playing piano, painting, karaoke, boxing, and tennis!

Abstract

Manual vacuum aspiration (MVA) is a safe and effective method of surgical abortion, which can be accomplished in an outpatient setting. However, this technique remains underutilized, especially in areas where abortion is banned or stigmatized. In this study, we examined the perceptions towards MVA before and after a training and simulation workshop for attending and resident physicians in Louisiana, a state where abortion was banned following the overturning of *Roe v. Wade* in 2022. Over 90% of resident and attending physicians reported that they were “very satisfied” with this training. Following the training, perceptions of ease and confidence in performing MVA were significantly increased among attending and resident physicians. Levels of comfort with performing MVA were also significantly increased among resident physicians. Additionally, following the training, the majority of participants reported that they would intend to offer MVA in their future practice. This shows that despite the political environment surrounding abortion, MVA training has the potential to be effective and well-received among physicians.

What is Life Like as an Immigrant Doctor in the U.S? – The “Life as an IMG Project”

Shamelle López Castillo

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Shamelle S. López Castillo is a 23-year old, 5th year medical student at the Instituto Tecnológico de Santo Domingo (INTEC) in Santo Domingo, Dominican Republic. She is the current president of the AMSA Chapter at INTEC and the medical team coordinator at a nonprofit that organizes medical outreaches in underserved communities in the D.R. Her interests in medicine are centered around Primary Care, Global Health, Family Medicine, and Pediatrics. She also enjoys researching. Born and raised in the Caribbean, Shamelle is a lover of beaches and the outdoors. She enjoys languages, reading, studying, and exercising. Her favorite companion is her dog, Tico. Her friends describe her as outgoing, trustworthy, and proactive. As for her future in medicine, she wants to emigrate to the United States to gain better quality education and a healthier work-life balance.

Abstract

Title: What is Life Like as an Immigrant Doctor in the U.S? – The “Life as an IMG Project”

Project background:

26% of physicians in practice and 24% of residents in specialty programs are International Medical Graduates (IMGs), highlighting their vital role in the U.S. healthcare system; however, little is known about their first-hand experience. Therefore, our AMSA Chapter was inspired to create the "Life as an IMG" project to explore the experiences of IMGs who have completed or are currently doing residency programs in the United States, by developing a series of seminars and a survey, with the latter being a 5-minute questionnaire that covers topics such as challenges faced by IMGs, discrimination, and enjoyable aspects of the journey with the goal of gaining insight on: what is life really like as an IMG in the U.S.?

Method:

The survey was sent to medical doctors who graduated from the medical school and are currently doing or have completed a residency program in the U.S. The recruitment process is ongoing, and the data collection will be completed by April 2023. Results from quantitative data will be expressed using central tendency measurements while qualitative data from open-ended questions will be expressed as written, or summarized. Access the survey via this link:

<https://forms.gle/FpVkJkVBM6keBBxg9>

Results:

Preliminary results show that 50% of IMGs from the medical school identify as female and 50% as male. The most common specialties were Pediatrics and Internal Medicine. 66.7% of IMGs always knew they wanted to emigrate to the U.S., 78% would do it over again and 80% think life as an IMG is as they expected. Studying for the Steps was the biggest challenge they faced, followed by adapting to a new healthcare system, moving away from family, and practicing medicine in a different language. 55.6% have experienced discrimination, but not all have experienced racism (33.3% said that they have). Physician burnout was also a common issue, reported by 66.7%. The best aspects of life in the U.S. included better quality of life, education and advanced medical care. Advice to medical students and younger self were enjoying the process, starting early, gaining experience, working hard and not losing oneself.

Conclusion:

Conclusions are to be drawn when the recruitment process is completed. Seminars run from January to April 2023, and results will be presented at the final seminar, to inform medical students about the reality of life as IMGs.

The First Case of Fournier's Gangrene with Streptococcus Anginosus in the Setting of Hidradenitis Suppurativa Perineal Abscess

Andreas Lau, Nobel Nguyen

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

I am a third-year medical student at Western University of Health Sciences, College of Osteopathic Medicine of the Pacific. I am the first in my family to pursue medicine. My interests in medicine sparked after witnessing multiple family members get diagnosed with cancer. Wanting to learn more about their diagnoses and prognoses, I eventually found myself on the path to medical school. Having participated in lab and clinical research, I have a profound appreciation for clinical and translational research. I plan to continue contributing to the body of scientific knowledge as a future physician.

Abstract

Fournier's gangrene is a rare but life-threatening form of necrotizing soft tissue infection involving the perineal, genital, or perianal region, commonly caused by a mix of aerobic and anaerobic organisms, including Escherichia, Clostridium, Fusobacterium, and microaerophilic Streptococcus species. It carries an identifiable etiology that is not limited to young males with risk factors such as diabetes, inflammatory bowel disease, and smoking. Management requires high clinical suspicion as treatment is imperative on early recognition, debridement, and broad-spectrum antibiotics. If left untreated, it may rapidly progress into multiple organ failure and subsequently death. We present a unique case of an individual with uncontrolled diabetes and hidradenitis suppurativa who developed Fournier's gangrene with Streptococcus anginosus as the lone causative organism. We recommend a multidisciplinary approach and rapid diagnosis for the management of Streptococcus anginosus in the setting of a perineal abscess, with early aggressive surgical debridement and broad-spectrum antibiotics to improve survival rates.

Suicide Among American Muslims and Factors Associated With Increased Rates

Sabrina Khuder, Caleb Gerber, Dr. Chandani Lewis

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Sabrina Khuder is a third year medical student at the University of Toledo College of Medicine and Life Sciences. She completed her bachelors in biology at the University of Toledo. She is interested in pursuing a career in psychiatry following graduation from medical school with interests in completing a fellowship in child psychiatry.

Abstract

Muslim Americans are at risk of mental health disorders due to numerous internal and external factors, and as a result are affected by suicide at a disproportionate rate. These factors include religious discrimination, stigma within the community, and barriers to treatment. This project explores these factors and their individual impacts. While this paper is still in the early stages of development, our future goal is to develop a survey to gather quantitative data to further our efforts into investigating the factors presented in this project.

A Medical Student Perspective of How Medical Simulation Education Improves Student Learning Outside Of The Classroom

Arman Qureshi, Byron Kunst, Dianne Walker, John Giannini

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Studying medicine at the Alabama College of Osteopathic Medicine in Dothan, Alabama. Graduate of the Rollins School of Public Health at Emory University. Highly motivated with a mindset for public health and the desire to improve ones quality of life. Relevant experience gained from research (clinical and basic science) and administration (internship). Obtained a Bachelor's degree in Cell and Molecular Biology from Augusta University. Completed research at Augusta University with Dr. Amy Abdulovic-Cui in conjunction with work surrounding my honors thesis. Previous work with the Georgia Department of Public Health as a Case Investigator with the Fulton County Board of Health's Covid Response team in conjunction with the Healthy Georgia Collaborative.

Abstract

Background/Vision

Preclinical medical education in the U.S. provides a heavy emphasis on basic medical sciences during the 1st two years of engagement, while neglecting a major aspect of the clinical curriculum: the patient encounter. Simulation education has been used to bridge this gap in undergraduate medical education by encouraging preclinical medical students to apply their knowledge beyond what they learn in the classroom. In the fall of 2015, the Alabama College of Osteopathic Medicine (ACOM) instituted its first of eight annual extracurricular in-house simulation competitions. Evaluating the longitudinal effectiveness of student participation in these medical simulation competitions can demonstrate the high value students place on learning from simulated clinical cases.

Methods

Each Fall, following a preliminary competition that included 100 OMS-1 and OMS-2 students, eight teams of five students participated in training; this culminated to a two-day in-house competition. Following the competition, all participating teams completed a Likert scale survey assessing their beliefs on our program's effectiveness. We analyzed eight-year composite data using standard measures of variance to assess the efficacy of the competition.

Results

Since 2015, eight-year composite mean percentages showed that students "Agreed/Strongly Agreed" that the competition prepared students for similar patient care scenarios in a real clinical setting (91) while also instructing student on how to be a better team members (93). Students found the simulation instructional strategy to be "Effective/Very Effective" in providing cases that were realistic (94), while ensuring a safe learning environment (98).

Discussion/Limitations

Limitations to our study included potential emotional bias from our competitors since the survey is given directly after the competition was completed. Additionally, the initial selection process incorporated a program that was difficult to standardize.

The medical student perspective going into their 3rd and 4th year is determined heavily by their exposure during their preclinical years. Over the past eight years, we have seen a commonality in the survey responses: pre-clinical exposure to simulation-based medicine positively affected the clinical experience for these students. Exposing students to clinically relevant medical cases allowed students to participate in the unique environment of clinical years without the pressure of failure in a real-life scenario. Given our composite results, future analysis of medical simulation education should incorporate responses from preceptors and clinical educators at ACOM.

Metabolic Pathways in AML Survival

Sarah Sammataro, Kristy Wang, Ahmad Chughtai, John Gribbin, Dr. Carter Takacs

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Sarah Sammataro is a first-year medical student at the Frank H Netter MD School of Medicine.

Abstract

Only 30.5% of patients with acute myeloid leukemia (AML) are alive five years after diagnosis, according to the National Cancer Institute. To combat this prognosis, many studies search for factors implicated in survival; in particular, recent efforts have investigated fatty acid oxidation as a new area of focus in cancer research. In this study, we aimed to identify key metabolic pathways and transcription factors associated with survival in AML with a goal of identifying potential candidates for future therapy and further investigation.

We examined first, metabolic profiles of AML patients associated with survival; second, specific metabolic pathways associated with survival; and third, which transcription factors were most strongly correlated with reactions associated with survival. For the analysis, we used data from the TCGA-LAML study accessed through the National Cancer Institute GDC Data Portal. Transcriptome profiling and associated clinical data from the study's 151 samples were extracted. Using the MaREA tool in Galaxy, we calculated Reaction Activity Scores (RAS) for each metabolic reaction to identify pathways in each sample that were transcriptionally elevated or repressed relative to other samples. Unsupervised clustering by RAS identified several distinct metabolic profiles, which represent samples grouped by metabolic pathway enrichment. We then used a Cox proportional-hazards model to identify metabolic profiles associated with survival while adjusting for patient age, followed by a LASSO regression analysis, which identified correlation coefficients for specific pathways that were most strongly associated with survival, and we found that increased beta-oxidation correlated with survival. Finally, transcription factor analysis using a multiple linear regression model indicates that increased expression of the ATF2 and decreased expression of CTCF are associated with survival, which previous studies have found to be associated with negative outcomes in other types of cancer. We believe these findings lend insight into possible key players in AML prognosis and provide a framework for the study of metabolic derangements in hematologic cancers.

Summer Camp as a Post-Pandemic Mental Health Support

Zachary Trotzky, Ryan Trotzky

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Zach Trotzky recently graduated from Georgetown University in May, 2022 with a Bachelor's Degree in Human Science. During his undergraduate education, he participated in multiple global health research projects including those tracking and analyzing the COVID-19 pandemic. He began research on summer camp during the summer before his senior year. Zach spent 12 summers at YMCA Camp Belknap in Tuftonboro, New Hampshire as both a camper and counselor. Currently, Zach works at Hospital for Special Surgery in New York City as a research assistant in the Center for Hip Preservation.

Abstract

The widespread effects of the COVID-19 pandemic were particularly detrimental to the mental health and social functioning of children and adolescents. Recent studies have reported increases in symptoms of anxiety and depression along with a general worsening trend in youth mental health. These observations can be attributed to multiple pandemic-related factors, predominantly increased technology use, social isolation, and the disruption of normal routines. This constellation of increased distress and hypothesized pandemic-related causes has prompted the search for additional mental health supports. Traditional overnight camps are one such environment; whose assets may serve to relieve these damaging effects.

Two studies were conducted with two different aims. A systematic review and meta-analysis were performed in order to examine the association between summer camp attendance and changes in young people's levels of anxiety in published literature (Study 1). Next, a longitudinal study was conducted to measure the hypothesized associations between pandemic-related risk factors and campers' mental health at the start of a two-week camp stay and investigate whether young people perceive their experience to be corrective in ways that potentially mitigate the negative social and emotional effects of the pandemic (Study 2).

Eight articles were selected in Study 1. Statistical meta-analysis yielded an effect size suggesting that participants experienced a small- to medium-size decrease in the intensity of their anxiety over their time at camp ($d = .25$; $SE = .06$, $p < .001$). These results offer evidence that participation in traditional overnight summer camps has anxiolytic benefits for young people.

In Study 2, 464 campers at an all-boys overnight summer camp were surveyed on their first and last day of a two-week session. Two optional and anonymous, self-report questionnaires were administered assessing mental health, social functioning, and pandemic-related factors. Prior consent was received from parents during registration.

Data analysis shows subjects experienced statistically significant increases in most positive emotion scores and statistically significant decreases in most negative emotion scores during their stay. One way ANOVA tests show that age and pandemic-related factors (screen time, remote schooling, and interactions face-to-face and online) have varying correlations with initial emotion scores and score changes across the session.

These two studies support the notion that summer camps offer therapeutic benefit in mental health symptoms and can be considered promising milieus for population-wide treatment of the increased anxiety in children and adolescents. Furthermore, empirical data provides insight into the changing landscape of youth needs and challenges following the COVID-19 pandemic.

Type Va Double Common Bile Duct: a case report

Shakira Gonzalez, Julio Oquendo Figueroa, Zurisadai Medina Alonso, April Nunez, Imitiaz Ahmed

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Shakira Enid Gonzalez is a fourth-year medical student, class 2019-2023, at Universidad Autonoma de Guadalajara (UAG). Currently, she is part of the Clinical Training Program at Abrazo Community Health Network in Phoenix, Arizona. After obtaining her BSc in Medical Microbiology and a certification in Interdisciplinary Astronomy from the Universidad de Puerto Rico, Shakira starts to cultivate her passion for improving people's lives through her voluntary work. Shakira has visited remote communities in Ecuador, Perú and México to work side by side with local doctors in mobile clinics and to provide high-quality medical attention to low-income populations. Shakira aspires to become a physician and complete a residency program in Psychiatry with a fellowship in Addiction Psychiatry. She speaks fluent Spanish and English. In his leisure time, she enjoys reading, hiking, and playing piano.

Abstract

Introduction: Type Va double common bile duct (DCBD) is an extremely rare congenital anomaly of the biliary system, in which two common bile ducts coexist. Most of the bile duct anomalies are associated with bile duct stones, ectopic bile duct lithiasis, common gallbladder cysts, abnormal pancreaticobiliary junction (APBJ), pancreatitis and malignancies of the upper gastrointestinal tract. According to the literature, only a few cases with double common bile duct type V were reported from 2007 to 2017, with all patients being female.

Patient presentation and disease course: This case report describes an 83-year-old male from the United States who presented to the emergency room with chest pain, shortness of breath and right upper quadrant pain. Patient has a significant past medical history of hypertension and diabetes mellitus type II. At the time of admission, the patient's physical exam revealed severe tenderness in the right upper quadrant of the abdomen with a positive Murphy's sign. Also, the patient was complaining of excessive bowel gas and inability to hold breath during imaging.

Intervention and management: In order to make a proper diagnosis, several imaging evaluations were performed on this patient to confirm the diagnosis of DCBD. A computer tomography (CT) angiography of the chest suggested cholelithiasis, which then was confirmed with a right upper quadrant abdominal ultrasound (US). Subsequently, magnetic resonance cholangiopancreatography (MRCP) showed the presence of type Va DCBD with cholelithiasis and acute calculous cholecystitis. Endoscopic retrograde cholangiopancreatography (ERCP) confirms the diagnosis and suggests a dilation of the common bile duct due to a loss of a largest gallstone. With the definite diagnosis of type Va DCBD, the patient's treatment regimen entailed a cholecystectomy, with a common bile duct (CBD) stent placement. Following the procedure, the patient will be scheduled for follow up appointments ensuring success of his surgery.

Outcome and discussion: In this clinical case, we report a rare congenital anomaly, type Va DCBD, complicated by cholelithiasis and acute calculous cholecystitis. With the incidence of this congenital anomaly being very uncommon and predominantly found in women, it is one of the first cases of type Va DCBD found in a male that has been reported in the United States. Due to the rarity of this anomaly, it is important to perform adequate preoperative imaging to have an early diagnosis and avoid long term complications with suggestions of appropriate surgical interventions.

Building Community Relationships via the Introduction of a Novel Medication Inventory System in a Free Community Health Center

Nick Allen, Isra Abdulwadood, Esai Ponce, Moustafa Hazin, Augustine Chavez

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Nick Allen is a second-year medical student at the Mayo Clinic Alix School of Medicine in Scottsdale, Arizona. He previously graduated with a bachelor's degree in Molecular and Cell Biology from the University of California, Berkeley, where he minored in Global Poverty. Nick's primary interests are in disease prevention, health systems, and health policy. He runs a nonprofit organization dedicated to addressing the social determinants of health in California and Arizona. Outside of work, Nick is a sports fanatic and will find any opportunity to exercise outdoors. He also loves to play board games, have philosophical conversations with his friends, and listen to stories from his 87-year-old grandfather.

Abstract

Our team of medical students worked to design an automated inventory system for a local community health clinic's free medication dispensary.

Please see attachment for full abstract.

MMP-13 and Rheumatoid Arthritis: A Story of Modified Collagen Degradation

Julianna Gregory, PhD Dorota Tokmina-Roszyk, PhD Ania Knapinska, PhD, MD Rikard Holmdahl, PhD Gregg Fields

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Julianna Gregory graduated from Nova Southeastern University in 2021 with a Bachelor in Science of Nursing. She is currently a postbaccalaureate student at Florida Atlantic University and joined the Field's lab in May 2022. Her research interests include Rheumatoid Arthritis, Alzheimer's disease, and biochemical processes. She looks forward to applying to medical school in the upcoming cycle and continuing to investigate why and how behind Rheumatoid Arthritis.

Abstract

Rheumatoid arthritis (RA) is a debilitating disease that culminates in articular cartilage degeneration and immune-mediated systemic inflammatory disease. One hallmark of RA is the production of abnormal antibodies years prior to actual inflammatory and degenerative effects on cartilage. However, it is unknown if these abnormal autoantibodies contribute to triggering degradation or if they are part of a protective effect. Metalloproteinase 13 (MMP-13) is believed to be a major mediator of collagen degradation and inflammatory responses during RA. In order to explore the effects of these antibodies on collagen digestion as well as the role generated fragments play in the progression of RA, bovine collagen and recombinant human MMP-13 were used to recreate collagen digestion in vitro.

Each antibody sample was mixed with bovine collagen and incubated for 6 hours at 37 ° C prior to enzymatic digestion. Later, MMP-13 was introduced to all samples to facilitate collagen processing and left at 37 ° C overnight. To separate collagen cleavage fragments generated by enzymatic digestion in the presence of antibodies, vertical electrophoresis was run. This technique allowed for separation of protein fragments based on size and charge, providing easy and direct comparison between different antibody samples. Based on the sequencing data obtained for each fragment, a series of peptides have been designed and synthesized using Fmoc-solid phase chemistry.

From five tested RA antibodies, four (Ab3, Ab4, Ab6, and Ab8) showed distinct cleavage patterns that differ greatly from fragments generated by MMP-13 in the absence of antibodies. Ab3 and Ab4 samples provided unique bands, ~37 kDa in size, not present in collagen samples treated with MMP-13 without antibodies. Additionally, the AB4 sample had a protein fragment at ~23 kDa unique to that sample only. Ab6 and Ab8 samples provided unique bands at ~28 kDa. Furthermore, all collagen/antibody samples tested with MMP-13 resulted in generation of low molecular weight fragments not present in control samples.

Overall, the data shows collagen samples treated with MMP-13 in the presence of antibodies generated low molecular weight fragments. Of those, four antibodies created unique cleavage patterns resulting in generation of higher molecular weight fragments not seen in control samples. It can be concluded that in the presence of antibodies MMP-13 generates abnormal cleavage patterns. In future research, peptides synthesized based on the fragments generated from abnormal MMP-13 cleavage pattern can be applied to chondrocytes in vitro to view effect of the abnormal protein fragments on these cells.

Evaluation of the basophil activation test (BAT) diagnostic value in diagnosing and monitoring of the allergy to Hymenoptera venom management.

Zuzanna Parfienowicz, Magdalena Krętkowska, Aleksandra Starosz, PhD Kamil Grubczak

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

My name is Zuzanna Parfienowicz and I am currently a 4th year medical student at the Medical University of Białystok, Poland. For almost three years now, I have been a part of students scientific group at the Department of Regenerative Medicine and Immune Regulation. My work consists of laboratory work, data analysis and writing scientific papers.

Moreover, I have already participated and presented my research at scientific conferences in Poland and abroad.

Right now, my work is focused on allergology, especially the topic of Hymenoptera venom allergy and immunotherapy implementation.

Abstract

Background: Hymenoptera venom allergy constitutes the most frequent cause of anaphylactic reactions in adults (approximately 48%). Despite similarities between bee and wasp allergies, their venoms' unique composition affects different responses of the immune system. Immunotherapy sensitization with specific allergen (AIT) is currently the only causative method used in treatment of patients allergic to hymenoptera venom. To date, confirmation of the complete tolerance to the specific allergen achievement remains a challenging issue. The Basophil Activation Test (BAT) measures indicated cells activation level after exposure to allergen. Thus, BAT could be a promising diagnostic and monitoring tool in the course of allergy management, still, however, requiring its value assessment in clinical practice.

The aim of study: The study was aimed at verifying the diagnostic value of the basophil activation test (BAT) implementation in monitoring patients allergic to hymenoptera venom.

Materials and methods: The study material was peripheral blood collected from bee/wasp-allergic patients, before and in the course of specific immunotherapy approach. The basophil activation test (BAT) was performed to assess basophil activity through measurement of CD63 and CD203c marker expression using flow cytometry.

Results: The assessment of basophil activation levels after exposure to a specific allergen demonstrated a significant increase of activated basophils, CD63+ and CD203c+. Noteworthy, we indicated the importance of proper allergen dose selection in the BAT. The effective dose in the monitoring of hypersensitivity in the test was established to be a 500ng/ml of the allergen. Higher doses of allergen seemed to block basophil activation and create false negative results. Moreover, observed effects were not related to changes in analyzed basophils' morphology and apoptosis process activation.

Conclusions: The obtained results emphasize the potential of the basophil activation test as an efficient tool in assessing the hypersensitivity to Hymenoptera venom. In accordance, basophil activation test might be a promising method for monitoring the specific immunotherapy outcome.

However, appropriate allergen dose have to be applied in the test to obtain reliable diagnostic results.

ASSOCIATION BETWEEN INTERPERSONAL RELATIONSHIPS AMONG MEDICAL STUDENTS AND MENTAL HEALTH: THE CARIBBEAN MEDICAL SCHOOL STUDY.

Wisdom Ikpama, Dr. Navin Ashok Patil, Ms Chimere Chukuka, Ms Oladunni Fatima Ashiru, Mr Oghenetega Goodnews, Mr Oluwaseun Olumide Olamilekan, Ms Grace Gbigbi-Jackson, Ms Oluwadamilola Omojola

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Wisdom Ikpama is a 2nd year medical student at All Saints University School of Medicine Dominica. Wisdom is a graduate of Delta State University, Abraka, Nigeria with a Bachelor's Degree in Human Anatomy and Cell biology.

He served as president in his local AMSA chapter, student ambassador in welcoming new students on campus, and organizing pre-orientations. He's also an international membership director candidate of AMSA. Wisdom has volunteered for several community services in Dominica. He is devoted in helping medical students in any way when needed.

Above all, Wisdom is a keen web developer, Forex Trader and experience clinical researcher. He enjoys cooking, dancing and reading.

Abstract

Background

Adolescents have many fears, and it is important for them to have someone who listens to their problems. Friendships are particularly important for them to maintain their mental health. In most cases, the listeners are their friends and students tend to choose different listeners depending on the nature of the problem. This study aims to assess the extent of depression and other health-related issues among medical students.

Methods

A sample of two hundred (200) questionnaires was adopted in this study. An online questionnaire was designed and distributed to medical students from different medical schools from different countries. Relying on the authors' networks with people living in the Caribbean, a three-page recruitment poster were posted/reposted to the students' groups such as WhatsApp, twitter and, Facebook. The online questionnaire contained items like who the students consult. Items includes the possible problems: 1. Anger with friends, 2. Bullying by classmates, 3. No boyfriend/girlfriend, 4. Interest in the opposite sex, 5. Bad breath or body odor, 6. Poor academic performance in school, 7. Disagreement with parents about career choice, 8. Lack of rewarding and challenging goals, and 9. Inability to find meaning in life. The students were also asked about their mental condition. The self-rating scale was designed to examine apathy and depression. The scales includes; "less pleasure—6," "sadness—6," and "apathy— 3," Students were asked to choose one of the three responses: "always", "sometimes" and "never".

Result

Results indicated that of the two hundred (200) respondent forty-one (41) were males while one hundred and fifty-nine (159) were females. The respondents fall into the following age group in descending order: 16-20 years (41.0%), 21-25 years (21.5%), 26 and above (37.5%). Majority of the respondents were in their medical stage (level) (48.0%). Majority of the medical students had the most problems such as poor academic performance, 60(30.0%) and where seen interested in opposite sex 52(26.0%). From the result, it was revealed that there is a relationship between level of study and depressive state of medical students ($P < 0.005$).

Conclusion

It can be concluded from this study that majority of the medical students preferred sharing their problems with friends and sometimes with their parents. Also, most of the medical students preferred keeping the problems to themselves as well. However, from this study majority of the medical students feels depressed and not very happy with their choice of career especially those who keep problems to themselves.

Evaluation of contraception and abortion education during third-year OB/GYN clerkships in secular versus non-secular hospitals

Rachel N Feltman, Dr Steven R Lewis, Dr Nathan E Thompson

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Rachel Feltman is a third-year medical student who is currently pursuing a Master's in Academic Medicine. She is interested in OB/GYN, specifically complex family planning.

Abstract

Contraception and abortion are topics of family planning that are continually left out of medical education during the pre-clerkship years as well as during the core OB/GYN clerkship. Here we evaluate the extent to which family planning topics are included in the curriculum of OB/GYN clerkships and if the curriculum differs at religiously affiliated hospitals. Overall, students reported a higher level of competency regarding contraception counseling confidence, ability, and knowledge compared to that of abortion counseling confidence, ability, and knowledge.

Investigation of circulating hematopoietic cells (HSCs) and very-small embryonic-like stem cells (VSEs) association with pancreatic beta cells function in the course of childhood type 1 diabetes.

Magdalena Krętowska, Zuzanna Parfienowicz, Aleksandra Starosz, Ph.D. Kamil Grubczak

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Magdalena Kretowska is a fourth year medical student at the Medical University of Białystok in Poland, where she is the president of the Students Scientific Group at the Department of Regenerative Medicine and Immunotherapy. During her studies she has participated in many students medical conferences in Poland and abroad, receiving several awards. Her research focuses primarily on autoimmune and allergic diseases and the effect of certain substances on cancer cells. Privately, she is a scouts leader and first aid instructor in Poland.

Abstract

Background

Type 1 diabetes (T1D) is one of the most common autoimmune diseases worldwide, with first clinical symptoms reported usually in children and adolescents. The consequence of the autoantibody production is the destruction of insulin-producing pancreatic beta cells. To date, the pathogenesis of T1D is still not fully understood due to a wide range of crucial factors affecting the disease onset: genetic, immunological, and environmental and therefore, research aimed at better understanding the disease progression and remission is of great importance. Stem cells nowadays are gradually becoming a promising therapy alternative in various autoimmune disorders. Here, we focused on establishing whether peripheral blood hematopoietic stem cells (HSCs) and very small embryonic-like stem cells (VSEs) are related to the function of pancreatic beta cells in T1D pediatric patients.

Methods

We enrolled 59 pediatric patients with newly diagnosed T1D, and monitored them during two years of therapy. Additionally, 31 age-matched healthy controls without inflammatory, oncological and autoimmune diseases were recruited. Metabolic status of patients and remission occurrence was based on C-peptide, HbA1C and daily insulin requirement (DIR) levels measurement. Peripheral blood mononuclear cells (PBMC) were isolated from anticoagulated peripheral blood to determine the frequency of VSEs and HSCs population using flow cytometry. Plasma levels of SDF-1 were measured using immunoenzymatic technique.

Results

Firstly, we did not notice significant differences between the VSEs and HSCs levels between the diabetic and control group. However, stratification based on the median C-peptide value revealed that T1D patients with higher C-peptide at the disease onset demonstrated decreased levels of HSC. Moreover, diabetic subjects with high c-peptide showed increased levels of peripheral VSEL. Furthermore, we noted that patients with lower initial frequencies of HSCs presented an increased chance of partial remission after the first 6 months of therapy. Reported changes seemed to be associated with concomitant changes in SDF-1 plasma concentration.

Conclusions

The results of our research indicate the potential of applying selected stem cells in predicting pancreatic beta cells function in the course of treatment. This would therefore suggest their involvement in the process of those cells' regeneration and function maintenance. Despite promising values of HSC and VSEL pointing them to be potential biomarkers of the remission occurrence in T1D, further studies are required to verify their diagnostic value.

Assessment of the Stress Caused by Medical School Application Process in Premedical Students.

Jezabell Noria, Ava Badiei

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Jezabell Noria, a pre-med student who is passionate about the medical field, has always been fascinated by the human body and its ability to heal itself. Jezabell has dedicated her life to learning about the medical sciences and has excelled in her studies due to her voracious appetite for knowledge. Jezabell is a driven and ambitious individual who is dedicated to making the world a better place. Jezabell was active in student organizations and initiatives, advocating for gun safety with AMSA and sharing all projects with her AMSA chapter. She is an undergraduate who is active in her college's Honors Society and Honors programs. Jezabell is well on her way to becoming a successful medical professional thanks to her focus and dedication. Jezabell hopes to continue making a difference and promoting positive change through his work.

Abstract

Background: Premedical students must go through a competitive and highly selective process when applying to medical school. The current medical school admissions process is filled with uncertainty and unpredictability, making it especially challenging for premedical students. The mission of the study is to raise awareness about this stress and to provide a set of resources to help premedical students manage it.

Methods: This research will examine the intensity of stressors in the medical school application process and how stress affects pre-medical students. This will be accomplished by conducting surveys in which participants will be divided into three groups based on their work and school schedules. Academic performance/GPA, volunteer hours, leadership roles, letter of recommendation, and MCAT are the categories to be evaluated. The goal of analyzing the data is to demonstrate the student's level of stress. We will provide a resource guide with various coping strategies, such as time management and communication skills, activities, social support networks, and seeking professional help.

Results: The study is currently in progress. To avoid unwanted results from other potential stressors in premedical students, a survey is being designed to specifically focus on the stress caused by the five categories of the study. The data will be collected and analyzed, and the results will be ready by April 2023.

Conclusion: The results of this research may demonstrate that premedical students are facing a significant amount of stress due to the medical school application process. It is important for premedical students to have access to resources and support systems that can help them manage their stress effectively. With better resources and support systems such as Colleges and Universities in place, premedical students can better manage their stress and focus on achieving their goals of getting into medical school.

Prevalence of Sarcopenia and Osteopenia in Older Veterans in Puerto Rico: Association with Functional and Clinical Assessment (Exercise Physiology/ Whole Body Composition)

David Ramirez

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

David Ramirez Alameda is a research assistant in both Nuclear Medicine at the VA Caribbean Healthcare System and Critical Care Pediatric Research at the Medical Science Campus in San Juan Puerto Rico. He is a senior student at the University of Puerto Rico, Rio Piedras Campus completing his Bachelor's degree in Molecular Cell Biology. His interests are Pediatrics and Physical Medicine and Rehabilitation.

Abstract

The decaying health situation of the elderly population is an important and emerging issue in Puerto Rico and worldwide. Sarcopenia, the decline in muscle mass, strength and physical performance, and osteopenia, a decrease in bone mass density, are associated with advanced age and the decrease in functional capacity and increased risks of falls and fractures. In Puerto Rico, there are no studies stating the prevalence of sarcopenia and osteopenia. Lack of information regarding prevalence of sarcopenia and osteopenia in the elderly population is a critical barrier in the development of new preventive strategies. Therefore, the aim of this cross sectional, descriptive study is to understand the prevalence of these conditions in the Veteran population in Puerto Rico. Research on these conditions is necessary to raise awareness and ensure that these populations become more active and independent during the national process of aging, educating them and the community in general. This research may impact the clinical care and quality of life of the Veteran senior patients and families, who suffer from sarcopenia and osteopenia, as these conditions represent a progressive impairment of functional capacities. This pioneer study can help the research team develop rehabilitation procedures to improve physical quality, reducing the time of treatment and health related costs in patients with both conditions.

Reduction of Health Disparities in Medical Education Through More Graphic Representation of Black Skin

Thomas Daka, Mary-Cynthia Kosi Udoh, Seona Wray, Cassi Jhingoree

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Thomas Daka a first year medical student at Georgetown American University who is glad to have had the opportunity to attend the Advocacy Scholars Program and interact with experts on key topics of advocacy. From this experience, Thomas learnt important concepts on advocacy that are not taught in the four corners of the medical classroom and was able to produce a project with his colleagues from it.

For the first time ever, he will be attending the AMSACon and is excited to interact with colleagues, Physicians and experts in the field and like minded individuals.

In the past, he has served as a student representative and In the future he hopes to occupy leadership positions in his AMSA local chapter and eventually positions at the National level to enable him build his leadership skills to serve his future patients better.

When he is not doing medicine, he participates in volunteering activities and health fairs in his local community.

Abstract

Background

The underrepresentation of darker skin tones and anti-Black racism training in published images has been widely reported in dermatology and general medical literature.

Systemic racism starts at the earliest stages of education, and this study is to examine our educational resources in medical practices. Inequitable representation in educational materials impedes the integration of cultural humility into physicians training and the subsequent delivery of racially equitable healthcare

Illustrations as well as animations, augmented and virtual reality simulations used in training material for medical professionals, are predominantly white. Globally there are a few than 2,000 trained medical illustrators and it is estimated that less than 8% are people of colour.

Method

The study is a retrospective literature review pertaining to the online sources such as PubMed and Google scholar. Key words such as "Health Disparities", "Doctors", "Graphical Representation", "Medical Illustrations", "Dark Skin", "Black Patients" and "Medical Education" separated by the AND operator in different combinations were used. The issues related Dark skin patient and medical education relations were highlighted and discussed here

Results

Findings indicate little to none black skin representation with exception of cases of STDs like herpes. According to studies 47% of dermatologists didn't get proper training for conditions on black skin. There are no images of covid-19 rashes on black skin but numerous pictures for white skin, as a result of these disparities black people received inadequate healthcare. Melanoma the deadliest form of skin cancer is diagnosed late and leads to higher mortality rate in blacks. According to the American Cancer Society, black patients have a 67% five year melanoma survival rate while whites have a 92% survival rate even when melanoma affects whites more than blacks.

Conclusion

Most textbook images represent lighter skin tones, and darker skins are more underrepresented in texts geared at Physicians and medical students. Inadequate exposure to the appearance of darker skin promotes and propagates racial inequities in healthcare.

To address healthcare inequities, we must be alert to our biases as physicians and reevaluate how we present critical information to future providers. Integration of resources from Skin of Color webinar series produced by New England Journal Medicine, Visual Clinical Decision Support Systems (VCDS), Skin of Color Society, Dermatology for Skin of Color textbook should be incorporated into medical training to help reduce disparities between light and dark pigmented skin.

COVID-19 pandemic duplicates cases of Diabetic Ketoacidosis in hispanic patients admitted to a teaching hospital

Natalia Carambot, Dr. Anabel Puig, Dr. Gilberto Puig

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Natalia Carambot Hiraldo is a biology junior student at the University of Puerto Rico, Rio Piedras Campus. She is a PICU research assistant at the University of Puerto Rico, School of Medicine. Her career interests are to continue medical studies, with a view to specializing in Pediatric Gastroenterology.

Abstract

Project Background:

Since COVID-19 pandemic, different countries have identified an increase in cases of children with Diabetic Ketoacidosis (DKA). Access to primary care physicians and subspecialties were limited during the pandemic and most of them gave telemedicine care to their patients. We evaluated the impact of COVID-19 pandemic on DKA admissions in a Pediatric Intensive Care Unit (PICU) in a teaching hospital on the prevalence and clinical outcome of patients admitted with the disease.

Methods:

In this retrospective study, we evaluated patients from 0-21 years of age with an official diagnosis of DKA 18 months before pandemic (August 2018-February 2020), and 18 months during pandemic (March 2020-October 2021) from PICU patient logbook. Data were expressed as medians \pm SD as appropriate. To compare the prevalence of DKA before and during COVID-19 pandemic, a Fisher Exact Test was used for proportions and categorical data. A Mann-Whitney test was used to analyze quantitative variables. A p-value < 0.05 was established as statistically significant.

Results:

A total of 128 patients were evaluated. Pre-pandemic, the median age was 15 ± 4.7 years and the median PICU total length of stay was 1 ± 2 days. During the pandemic, the median age was 14 ± 4.5 years and the PICU total length of stay was 1 ± 1.3 days. Previous COVID-19 pandemic there were 42% of DKA patients admitted to PICU vs 58% during COVID-19 pandemic ($p=0.01$). There was a significant difference between DKA cases before and during pandemic.

Conclusions:

The lockdown and limited access to medical care services due to the COVID-19 pandemic produced delayed treatment, leading to increased cases of DKA and severely affecting the health of chronic diseases such as diabetes. Physical encounters with physicians contribute to an appropriate follow-up of patients. Since there was no severity trend in pediatric patients in the first few months, medical care strategies should be considered for this population. It's not excluded that the severity of DKA disease was due to the lack of compliance by children with respect to their feeding and stabilization with medications in the pandemic period. Future management of chronic disease in children could include appropriate coordination between patient and primary care physician to ensure the availability of medications, adherence to treatment regimens, and knowledge of which hospitals can appropriately treat the disease.

Effect of Hyperinsulinemia on Leptin and Ghrelin Levels in PCOS: A Meta-Analysis

Mikyla Reesor, Amy Alam, Yvette Goudiaby, Nicole Grossett, Natasha Zand, Royon Chichester, Luis Eschevarria-Javier, Dr. Mykhailo Vysochyn

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Second year medical student at Saint James School of Medicine with a background in Kinesiology from the University of Waterloo. Passionate advocate for increased research and education surrounding Polycystic Ovarian Syndrome (PCOS).

Abstract

Background: Polycystic ovarian syndrome (PCOS) is the most common endocrine disorder in women of reproductive age. Leptin and ghrelin are important markers in PCOS due to their correlation with obesity, insulin resistance and fertility. There is currently a debate in the literature about whether altered leptin and ghrelin levels in women with PCOS are a result of the disease itself, or if they are due to factors such as the hyperinsulinemic state characteristic of PCOS.

Objective: The aim of this meta-analysis is to assess if insulin levels impact leptin and ghrelin levels in PCOS.

Methods: Eight case control studies assessing the relationship between insulin and leptin, as well as six case control studies assessing the relationship between insulin and ghrelin were identified in PubMed. Pearson's Correlation Coefficient (PCC) and the sample size were extracted and two meta-analyses were conducted using a random-effects model. Total heterogeneity (I^2) with a confidence interval of 95% was then determined. "Leave-one out" diagnostics were calculated for each case. If a study was identified as being significantly influential, the study was removed from the data set and the trim and fill procedure was applied. Publication bias was assessed using Egger's regression test and Rank correlation test.

Results: Our results showed a moderate positive relationship ($r=0.57$, 95% CI [0.40, 0.70]), with substantial heterogeneity ($I^2=81.35\%$, 95% CI [25.2799, 88.2451]) between insulin and leptin levels, and a moderate negative relationship ($r=-0.32$, 95% CI [-0.41, -0.22]), with low heterogeneity ($I^2=0.00\%$, 95% CI [0.0000, 80.8159]) between insulin and ghrelin levels.

Conclusion: There is a significant relationship between insulin and leptin and ghrelin in PCOS. If insulin resistance can be managed, this may have positive effects on fertility, appetite, weight control and body image in this population.

Alzheimer's Disease Study using Optimal Unified Approach for Single Kernel Association Testing

Russell Myers, Ph.D. Noa Rappaport

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

My name is Russell Myers and I am currently a pre-med student at the University of Washington in Seattle, Washington. Growing up in the State of Washington, I attended the Bellevue School District Gifted Program where I obtained the International Baccalaureate (IB) Diploma and High School Diploma.

I have been interested in biomedical science since very young. In the past years, I worked as a summer research intern at the Fred Hutchinson Cancer Research Center and then the Institute for Systems Biology in Seattle, Washington. Currently, I work as a part-time Undergraduate Researcher at Moritz Restorative Technologies Lab in the Department of Rehabilitation Medicine of the University of Washington. My research posters in neuroscience research have won top awards at Washington State Science and Engineering Fair in 2020 and 2021. My career goal is to become a physician-scientist to help patients with brain disease.

In my spare time, I love reading and playing basketball with my friends.

Abstract

Genetic variation plays a substantial role in the heritability of Alzheimer's disease. Using large deeply phenotypes patient data sets, we can potentially identify the genetic causal pathways to the development of Alzheimer's disease. Using Single Kernel Association Testing with Optimized uniform testing (SKAT-O) approach for statistical analysis, we hope to shed light on genetic causal pathways to the development of Alzheimer's disease (AD). Using specialized regression analysis to find these pathways, we can potentially provide targets for intervention and develop personalized cognitive therapies to treat AD.

Pediatric Peripherally Inserted Central Lines: Sonography, a Better Alternative for Tip Position Confirmation

David Ramirez, Edwin Medina Gonzalez, Dr. Ricardo Garcia

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

David Ramirez Alameda is a senior completing his Bachelor's degree in Molecular Cell Biology at the University of Puerto Rico, Rio Piedras Campus. He is a research assistant for Critical Care Pediatric Research at the University of Puerto Rico, School of Medicine. He is also a research assistant in Nuclear Medicine for the VA Caribbean Healthcare System. His career interests are Pediatrics and Physical medicine and Rehabilitation.

Abstract

The Peripherally Inserted Central Catheter (PICC) line is a central line inserted through a vein near the elbow all the way to a vein near the heart used for patients who require long-term intravenous therapy, patients needing frequent blood samples and patients with poor peripheral access. The Pediatric Michigan Appropriateness Guide for Intravenous Catheters (miniMAGIC) recommend tip position in the lower 1/3 of the SVC, cavoatrial junction or the RA. Some studies suggest chest radiography (CXR) may not be necessary for position confirmation. The aim of this study is to assess the risk-benefit ratio of post-procedural CXR. Due to the low complication rate after PICC line placement reported in the literature, and the availability of sonographic guidance for PICC line insertions, it is necessary to reevaluate the mandatory use of post-procedural CXR for the sole purpose of assessing tip of line position. Avoiding the use of CXR after PICC placement could reduce time of treatment, reduce costs invested in the employee's time and X-ray supplies, and most importantly, it will reduce radiation exposure from CXR and the health risks associated with it. Another outcome of this study is to determine the rate of incidence of PICC related complications in the University Pediatric Hospital at the Medical Science Campus.

Impacts of Wildfire Events on California Radiation Oncology Clinics and Patients

Co-First Author Katie Lichter, Co-First Author Claire Baniel, Isabelle Do, Yasmeen Medhat, Vennela Avula, Bria Larson, Leticia Nogueira, Nauman Malik, Anna Paulsson, James Bates, Osama Mohamad

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Isabelle Do has been a member of the American Medical Student Association since her first year at the University of California, Berkeley. As her chapter's Vice President of Internal Affairs, Isabelle is passionate about creating programming and open resources for students interested in the pre-medical pathway, healthcare advocacy, and medical education. Beyond AMSA, Isabelle is involved in medical advocacy and researching clinical environmental health through the University of California, San Francisco's GreenHealth Lab. With an interest in increasing patients' access to healthcare via systemic analysis and change, along with environmental justice ideals, she hopes to continue projects, like the one today, across numerous patient populations and climate disasters.

Abstract

The impact of climate-related disasters, such as wildfires, on healthcare delivery and cancer care is a growing concern. Patients undergoing radiotherapy, which relies on consistent care, are particularly vulnerable to treatment interruptions, which are known to have a direct impact on survival outcomes. We report the results of the first pilot study characterizing the impact of wildfires on radiation oncology clinics and their patients.

A total of 415 practicing California radiation oncologists representing 144 clinics were identified using the American Society for Radiation Oncology (ASTRO) member directory. A Qualtrics survey was then created and sent to those identified to gather information about clinic and radiation oncologist demographics, wildfires' impacts on the clinic (physical/operational), physicians, staff, and patients between 2017 and 2022, as well as clinics' disaster preparedness efforts. Additionally, a synthesis of data from the above survey, rural-urban continuum codes (RUCC), and California wildfire data was done to compare the impact across rural and urban populations.

51 radiation oncologists completed the survey, representing 43 clinics (30% of clinics) in 24 (41%) of California counties. A total of 31 clinics were impacted by a wildfire between 2017 and 2020. 28 (55%) of respondents reported impacts on patients, including having to evacuate, 27 (53%) having to cancel or reschedule treatments, and 23 (45%) experiencing physical, mental, or financial hardship due to wildfires. Among the 25 clinics impacted by wildfires, 12 (24%) reported physical/operational impacts, including being forced to evacuate patients to another treatment center, transportation interruptions (19, 37%), community and regional evacuations (18, 35%), school closures (18, 35%), and physical/mental health impacts (14, 27%) on staff. Small clinics (25 staff or less) that experienced a wildfire were twice as likely to experience closures (6 of 16 clinics, 38%) compared to larger practices (7 of 15, 47%). Less than half of the respondents, 25 (47%), reported their workplace had a wildfire emergency preparedness plan.

The results of this study demonstrate the significant impact wildfires have on patient care in rural and metropolitan areas. The findings emphasize the importance of emergency preparedness planning to minimize the consequences of such disasters and underscore the need for further research to explore risk factors associated with patient and community vulnerability to climate-related crises. This study also serves to inform and guide future studies regarding the effects of different climate disasters on the radiotherapy patient population to inform and develop future emergency preparedness plans.

Student-Led Medical Education Collaboration: An Introduction to Recipes for Success

Isra Abdulwadood, MS3 Dzhuliyana Vasilev, MS1 Chuying Su, MD Amit Shah

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Chuying Su is a first year medical student at the Mayo Clinic Alix School of Medicine Arizona campus.

Abstract

Student-led success guides, such as the Mayo Clinic Alix School of Medicine Arizona's (MCASOM AZ) "Recipes for Success" (RfS) guide, are centralized resources for disseminating pertinent information needed to succeed in medical school. These guides promote collaboration and equitable information exchange, which especially benefits first-generation and/or underrepresented in medicine (URM) students by demystifying hidden medical curricula.

Development of Mentorship Program for Pre-Medical Students

Anvitha Madhavaram, Alexander Didier, Vikhyathi Pallerla, Emily Moore, Shivani Rana, Dr. Patrick Frank

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Anvitha Madhavaram is a second-year medical student at the University of Toledo College of Medicine and Life Sciences. Anvitha is originally from Chicago, Illinois and is currently co-president of her AMSA chapter at the University of Toledo. Alongside her fellow co-president, she has helped develop the first medical student run mentorship program for pre-medical students in Northwest Ohio.

Abstract

Project Background:

As the leaders of the only medical school and AMSA chapter in our region, we recognized the importance of being informative and supportive mentors to pre-health students as well as developing strong connections with the local healthcare community. To ensure the efforts of our organization and program remain financially sustainable, we strived to fundraise money while simultaneously offering volunteer opportunities to undergraduate students interested in becoming more involved in the medical community. We aimed to reach out and involve not only our associated undergraduate premedical students, but the other healthcare professional schools in our university as well.

Methods/Process:

In order to begin forging a connection between both the medical school and undergraduate campus, we have worked to expand our reach and publicizing efforts to recruit a large number of volunteers for our developing mentorship program. Financial fundraising efforts this year consisted of offering whitecoat embroidery to medical students and organizing the largest fundraising event hosted by medical students with the help of pre-medical student volunteers involved in the Mentorship Program. MedBall is a unique event where all generations of healthcare professionals, medical students, and future medical students within the community were able to connect with one another and raise money for our chapter initiatives.

Results/Impact:

We were able to recruit over 100 pre-medical students as mentees and over 60 medical students as mentors to the mentorship program this year. We will be sending out a post-survey to assess degree of community belonging, mentee medical school readiness and mentor leadership development at the conclusion of the program. Data collection will be complete by April 2022. Financially AMSA was able to collect profit from multiple fundraising events, while giving Mentorship Program students the opportunity to interact with student mentors and physicians in the medical community. All profits received will go towards future mentorship events to expand mentorship opportunities and the resources we can provide to prospective medical students.

Conclusions:

Our chapter was able to make large strides in forming interprofessional relationships with the premedical students as well as Nursing, Physical Therapy, Physician Assistant, and Pharmacy schools. For the upcoming years, we hope to expand our mentorship program further through the involvement of other regional undergraduate institutions that may not have their own associated medical school to do our part in helping to further the journeys of future healthcare professionals.

Natural Killer Cell-Based Immunotherapy: A Promising Strategy for the Treatment of Glioblastoma Multiforme - A Review

Waqar Kazmi, [Boris Kolesnikov](#)

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

As an Honors junior high school student and dual-enrollment student at Northern Virginia Community College, my passion lies in exploring the genetic components of diseases and the application of cutting-edge technologies like CRISPR-Cas9 and PEG in treating conditions such as glioblastomas. I have been fortunate to participate in several immersive programs that have deepened my understanding of the biomedical sciences. I was part of Rutgers NJMS's Mini Medical School, where I gained exposure to clinical medicine. The Biomedical Sciences Summer Immersion Program at GW enabled me to learn basic biomedical techniques. As a participant in Lenox Hill Neurosurgery's BRAINterns Summer Program, I learned about some of the latest advancements in neurosurgery, further fueling my interest in the brain and CNS systems. To better understand stroke management and spinal cord injuries, I attended Northwell Health's Comprehensive Management of Stroke and Inova Health's Spine Symposium. I have also been working as a tutor for Biology and Chemistry courses at my college and volunteering in internal medicine and at a local hospital, where I have gained valuable hands-on experience and exposure to patient care. Looking ahead, my goal is to join a BS/MD program to continue pursuing my passion for biomedical research and medicine.

Abstract

Background:

Glioblastoma multiforme (GBM) is an aggressive primary brain tumor that is difficult to treat and has a poor prognosis. Current treatments, such as surgery, radiation, and chemotherapy, are often ineffective in preventing tumor recurrence and improving overall survival rates. Natural killer (NK) cell-based immunotherapies have emerged as a promising treatment option for GBM due to their ability to target cancer cells and regulate the immune response. This literature review aims to summarize and discuss the current state of knowledge regarding the potential of NK cell-based immunotherapies in the treatment of GBM.

Methods:

A comprehensive search of peer-reviewed literature was conducted using various electronic databases, including PubMed, Crossref, and Google Scholar. The search was conducted using relevant keywords and combinations of keywords, such as "natural killer cells," "cancer immunotherapy," "glioblastoma multiforme," and "CRISPR." Studies published in English from 2009 to 2023 were included in the review.

Results:

The review found that NK cells have shown promising results in various preclinical and clinical studies, particularly in the treatment of hematological malignancies such as acute lymphoblastic leukemia. However, the effectiveness of NK cells in solid tumors such as GBM remains a challenge, due in part to the immune-suppressive microenvironment of these tumors. Several studies have explored the use of NK cell-based immunotherapies in GBM, including adoptive transfer of ex vivo expanded NK cells and engineering of chimeric antigen receptors (CARs) to target GBM-specific antigens. Preclinical studies have shown promising results in terms of improved survival rates and tumor regression, while early-phase clinical trials have demonstrated the feasibility and safety of NK cell-based immunotherapies in GBM patients.

Conclusion:

The use of NK cells in cancer immunotherapy, particularly in the treatment of GBM, holds great potential as a viable treatment option. While challenges remain, such as optimizing the effectiveness of NK cells in the tumor microenvironment, ongoing research and clinical trials are providing encouraging results. As such, NK cell-based immunotherapies represent a promising avenue for the development of effective cancer treatments. Further studies are warranted to fully understand the potential of NK cells in cancer immunotherapy and to optimize their use in the clinic.

Cheiro-Oral-Pedal Syndrome; The Role of Imaging in Diagnosis and Management

Garrett Barfoot, Zachary Merhavy, Leah Dajani, Zainab Elmahmoud, Emmanuel Flores, Thomas Varkey

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Garrett Barfoot DC, MSc is a former chiropractic sports physician turned medical student (MS2), and an aspiring MSK radiologist. A husband, father, friend, and outdoor enthusiast. Currently on the RUSM Dean's list, RUSM Diagnostic & Interventional Radiology Interest Group President, RUSM Head Anatomy TA, RUSM Peer Tutor, RUSM Sports Medicine Clinical Instructor, and SIR Resident & Fellows Section - Medical Student Council Reserves. Former RUSM Student Government Association Curriculum Chair, recipient of the Student Government Associations "Heart of RUSM" award, recipient of the academic success scholarship, and recipient of the RUSM AMSA Convention Scholarship. Passionate about learning, medical education, research, interdisciplinary collaboration, and service.

Abstract

A remarkably unique case-report of Cheiro-oral-pedal syndrome that includes important implications for the use of optimal imaging modalities in the diagnosis, monitoring, and management of the disease. This is both timely and of particular importance to increase awareness of such unique and varying symptomatology that is often the first indication of more serious underlying pathologies, as the comorbidities and risk factors for this and similar conditions are increasingly prevalent, making the risks of misdiagnosis and mismanagement increasingly high.

Lineage-specific overexpression of LMX1B elicits different responses in the basal and the apical calvaria

Jeslyn Mei, Maria Pacheco-Vergara, Thach-Vu Ho, Angel Cabrera Pereira, Yang Chai, Associate Professor Juhee Jeong

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Jeslyn Mei is a student at Hunter College's Macaulay Honors College, where she is majoring in Psychology with a Concentration in Behavioral Neuroscience. As a recipient of the John P. McNulty Scholarship, she is currently a researcher in the Jeong lab at the New York University College of Dentistry. She studies the genetic mechanisms behind calvarial development to improve our understanding of craniosynostosis, a related birth defect. Jeslyn is dedicated to utilizing her knowledge in brain and orofacial development to strengthen interdisciplinary healthcare and unite oral health with body systems. Upon completion of her undergraduate studies, she intends to apply to graduate school to pursue a career in dental care and continue pursuing research to become a leader in oral-systemic health.

Abstract

The calvaria, the top part of the skull, consists of the frontal, parietal, and occipital bones held together by sutures and fontanelles. The supraorbital mesenchyme acts as the ossification center to form the frontal and parietal bone and coronal suture that separates them. These cranial bones are derived from embryonic cell populations that form distinct tissue lineages: neural crest-derived frontal bone and mesoderm-derived parietal bone. However, the mechanism by which sutures determine their position during development is largely unknown. The anti-osteogenic property of LMX1B has been shown to be crucial to proper calvaria formation. Here, we investigate the effect of neural crest-specific overexpression of LMX1B on calvaria formation using a Cre-loxP system on a mouse model. To label the mutant and non-mutant cells, we used ROSA26-YFP Cre reporter. We also performed microCT morphometric analysis of mutant and control calvaria to examine the relative position of the coronal suture within the frontal bone-coronal suture-parietal bone complex. We found that the apical coronal suture shifted to the anterior in the mutant due to the reduced frontal bone. Surprisingly, the basal coronal suture shifted to the posterior in the mutant. Further lineage analysis showed that mesoderm-derived cells contributed to the frontal bone to compensate for the loss of neural crest-derived bone in the basal calvaria. The apical calvaria lacked compensation by the mesoderm bone. Thus, the basal calvaria, but not the apical calvaria, has a mechanism to resist anterior shift of the coronal suture, which appears to have overcompensated in our mutant.

Association between PON1 Q192R, CYP2C19*2 Variants and SYNTAX Score in Caribbean Hispanic Patients with Coronary Artery Disease

Camila Calzada, Dr. Mariangeli Moneró, MSC Jessica Renta, Dr. Hector Nuñez, Dr. Jorge Duconge

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Camila S. Calzada-Lozada is a Celular Molecular Biology major at University of Puerto Rico, Rio Piedras Campus. She has been a member of AMSA UPRRP Chapter since 2020. She is the current Vice-president of her chapter. A current American Heart Association HSI Scholars Program Alum, researching the association between pharmacogenomics and clinical outcomes in Caribbean-Hispanic patients under Dr.Duconge-Soler's lab in University of Puerto Rico, Medical Science Campus. Will be graduating in May 2023 and starting Medical School in August in University of Puerto Rico, Medical Science Campus School of Medicine.

Abstract

This pilot study aims to statistically test the pharmacogenetic association between the Q192R polymorphism in the PON1 gene, the CYP2C19*2 variants and the SYNTAX score in Caribbean Hispanic patients with coronary artery disease (CAD). The SYNTAX score is an angiographic grading tool to determine the complexity and severity of CAD. CYP2C19 SNPs have been linked to resistance of clopidogrel, which is part of the standard Dual Anti-Platelet Treatment (DAPT) for CAD. The PON1 gene encodes for paraoxonase-1, an esterase synthesized in the liver and associated with high-density lipoprotein (HDL) in the blood. PON1 Q192R (rs662) is a single nucleotide polymorphism (SNP) in the PON1 gene causing an amino acid substitution from glutamine (Q) to arginine (R) that modulates enzymatic activity. The presence of the R allele has been shown to be associated with higher PON1 hydrolytic activity and decreased total cholesterol, LDL-C, and ApoB, whereas the Q allele can prevent LDL oxidation. Human studies have confirmed the protective role of PON1 in CAD and other atherosclerosis-related diseases. However, few studies have examined this association among Caribbean Hispanics. Consequently, there is a paucity of data on the predictive value of this genetic marker in this underrepresented population. In this study, we propose to close this gap by elucidating whether the PON1 Q192R and CYP2C19*2 variants are predictive of CAD severity in a sub-cohort of Caribbean Hispanic CAD patients.

PERCEIVED DISPARITIES IN HEALTHCARE: IMPACT ON FAMILY CONSENT TO DECEASED ORGAN DONATION

Chanel Rutledge, Dr. Edmond O'leary, Dr. Indra Daniels, Dr. Abdelrahman Elemam, Ms. Nicasia Jackson

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Chanel Rutledge is a M.D. candidate in the Ross University School of Medicine class of 2024. She was born in New York City and earned her bachelor's degree from Binghamton University in 2014. Prior to medical school, she worked as a medical scribe at CityMD urgent care as well as a medical assistant/patient coordinator in the surgery department at Mount Sinai Icahn School of Medicine. Her research interests include surgical outcomes, quality improvement, global surgery and racial/ethnic disparities. Chanel is interested in pursuing a career in general surgery.

Abstract

Our goal was to identify perceived disparities in healthcare which may have led families to decline authorization for deceased organ donation regardless of NYS organ registration status through a retrospective analysis. 1 family out of 75 perceived a disparity based on race. As a result of these findings, we increased our engagement with the organ procurement organization which included improving education for hospital staff.

The Impact of Systemic Barriers to Abortion Care Access at AltaMed and Steps Towards Serving its Historically Disinvested Communities

Thao Le, Enedina Sepulveda Martinez, Dr. Huong Nghiem-Eilbeck, Dr. Marco Angulo

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Thao Le (she/her/hers) is a Vietnamese American, third-year medical student at Michigan State University, College of Human Medicine at the Flint campus. She is interested in reproductive health justice and is committed to working with diverse populations, serving underserved communities, and advocating for health equity.

Enedina Sepulveda Martinez (she/her/hers) is a first-generation, Mexican American second-year medical student. She currently attends the Wright State University Boonshoft School of Medicine in Dayton, Ohio. Enedina is interested in women's reproductive health, family medicine and serving underrepresented communities.

Abstract

Project Background:

The recent overturn of Roe v. Wade creates barriers to essential reproductive health care access nationwide. Limiting legislation disproportionately affects historically disinvested communities, such as people of color and low-income families. These are the populations that AltaMed Health Services Corporation (AltaMed), a federally qualified health center (FQHC) in Southern California predominantly serves. AltaMed does not currently provide direct abortion services due to potentially restrictive legislation; however, a better understanding of relevant legislation can create avenues for providing reproductive care. As the largest independent FQHC in the nation, AltaMed has the potential to expand its services to the community. Our purpose is to analyze legislation guiding the provision of abortion care at AltaMed, raise awareness to the populations these policies affect, and provide guidelines and considerations to ultimately expand direct abortion care services to the communities it serves.

Methods:

We reviewed current and pending federal, state, and local legislation surrounding abortion services at AltaMed up until December 2022 and analyzed its Women's Health Services data collection for demographics and statistics of patients receiving reproductive care. Data collection was extracted for reproductive health services received, patient outcomes, and demographics. Such demographics included women of reproductive age (ages 15-44 years), estimated income level, ethnicity, race, and insurance status.

Results:

We identified 13 legislations for review, which showed more areas of non-restriction than restriction. The Hyde Amendment was the most limiting policy due to its direct restrictions on FQHCs. Up until 2022, AltaMed has served a total of 192,025 female patients of reproductive age. In 2021, there were 6,796 total pregnant patients at AltaMed, 12.4% of which had non-live birth pregnancy outcomes. Data collection indicates that the majority of patients were insured with managed care, low-income, non-Caucasian females with high rates of loss to follow-up.

Conclusion:

Despite limiting legislation, there are exceptions, supporting legislation, and considerations that create exploratory avenues to abortion provisions. Policies were less restrictive than previously anticipated. Data collection highlights the potential impact of abortion services on AltaMed patients. We recommend AltaMed to further investigate policies, considerations, patient care gaps, and health education tools to ultimately expand abortion services and address its community's needs.

SARS-CoV-2 prevalence in a delivering population: refugee status, payor type, race, and vaccination status

Eleanor Johnston, Bikash Bhattarai, Dean Coonrod, Crista Johnson-Agbakwu

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Current medical student and aspiring OB/GYN at Creighton University School of Medicine, Phoenix Regional Campus. Williams College '18 graduate originally from Park City, Utah.

Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) disproportionately affected refugee populations at the onset of the pandemic. This study analyzed the prevalence ratios of SARS-CoV-2 across refugee and other populations of parturient patients delivering at a public safety net hospital from May 2020 to May 2022. The goal of this study was to better serve and identify public health concerns within refugee populations—a population that has previously been difficult to identify in electronic medical record (EMR) data and chart review studies.

Intermittent Theta Burst Stimulation in the Prelimbic Cortex Drives Brain-wide Circuit Reorganization and Rescues Stress-induced Spine Elimination

Pooja Suganthan, David Estrin, Dr. Shane Johnson, Thaira Ahmed, Christine Kuang, Dr. Conor Liston

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Pooja Suganthan is a fourth year student in the Macaulay Honors Program at Hunter College where she is pursuing a Biology degree (BA) and Psychology minor. Pooja is working at the Liston Lab at Weill Cornell to investigate motivational behaviors and decision making. Her interest in behavior stems from her experiences as a home health aide and working with individuals diagnosed with Autism Spectrum Disorder. Pooja is an active member of CUNY's competitive Bollywood fusion dance team, Macaulay Deewane. Upon completion of her undergraduate studies, Pooja will apply to medical school to integrate her studies of the brain with patient focused health care.

Abstract

Background: Stress-induced spine elimination in the prefrontal cortex (PFC) is believed to be a primary driver of depressive symptoms. In parallel to PFC dendritic spine elimination, there is evidence that chronic stress leads PFC circuits to possess desynchronized activity. Transcranial magnetic stimulation (TMS) is a noninvasive stimulation of nerve activity. Intermittent theta burst stimulation (iTBS) is a repetitive mode of TMS that has been shown to induce long term potentiation and serve as a therapy for treatment-resistant depression. The objective of this study is to determine whether spine restoration is sustained due to chronic iTBS. We hypothesize that iTBS of the PFC following chronic stress will rescue dendritic spine elimination in the PFC and subsequently drive changes in dendritic spine reorganization throughout the entire brain.

Methods: To test this, mice for iTBS experiments were injected with AAV1-CAG-ChR2-mCherry or AAV1-Ubi-eGFP and implanted with a fiber optic cannula into the PFC. We utilized optogenetics to stimulate the PL neurons following 14 consecutive days of corticosterone exposure, a common endocrine model of stress in mice. Mice underwent behavioral tests or were used for Golgi staining, imaging, and spine quantification. Images of the Golgi-stained slices of the entire brain after iTBS optogenetic treatment were analyzed for changes in dendritic spine quantities.

Results: After iTBS treatment, treated brains demonstrated significantly higher spine density than the control brains. Individual branches of Layer 1 treated brains exhibited significantly higher spine density than the remaining layers of treated and control brains. This indicates a potential mechanism for the workings of TMS. Magnification of the brain slices enabled us to view the cell body, dendritic branches, and the dendritic spines of the mPFC, dorsal striatum and olfactory bulb of the experimental animals. The mPFC and olfactory bulb regions mainly showed pyramidal neurons, whereas the dorsal striatum mainly showed medium spiny neurons.

Conclusions: This study aimed to explore whether spine restoration is sustained due to iTBS after stress induced spine loss. This study provides insight on processes in the connectome under TMS treatment. This study also identifies that iTBS treatment increases spine formation in branches found in Layer 1 of the mPFC. Future work should focus on quantifying spine density in downstream brain regions.

The Happiness Longitudinal Selective: Incorporating Wellness Techniques for First-Year Medical Students

Yihuai Qu, Renita Wilson, Catherine Williams, Dzhuliyana Vasilev, Ning McKenzie, Molly Klanderma, Cynthia Stonnington

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Yihuai Qu is a second-year medical student at Mayo Clinic Alix School of Medicine at the Arizona campus. She received a bachelor's degree in Biomedical Engineering from Columbia University. Currently, she has an interest in surgery, women's health, and personalized medicine.

Abstract

Compared to similarly aged U.S. college graduates, medical students have a higher prevalence of emotional exhaustion, symptoms of depression, and burnout, which can adversely affect students' physical and mental health and academic demands [1]. While medical schools have increasingly shifted more attention to wellness interventions, student buy-in is critical so that such interventions themselves do not become an additional burden [2]. While these issues stem systemically, exploring individual strategies can better equip medical students to handle training challenges and lay the foundation for a healthy career.

Using Yale University's Science of Well-Being course by Professor Laurie Santos as the foundation, the Happiness Selective at our medical school was started in 2021 as a student-led initiative. The ten-session course emphasized small group discussions scheduled approximately two weeks apart over five months. The first half of the course emphasized implementing smaller goals, such as keeping a daily gratitude journal or sleeping 7+ hours, followed by a month-long individual reirement challenge of the student's choice. Additionally, students took the Subjective Happiness Score (SHS) and WHO-5 Well-being Index (WWBI) surveys before the start of the course at baseline, immediately after the completion of the course, and 3 months after the completion. Data were analyzed with descriptive statistics and paired t-tests. A p-value of less than 0.005 was determined to be statistically significant.

Students who completed the selective consisted of 18 first-years (M1s) and 2 second-years (M2s) in 2021 and 29 M1s and 1 M2 in 2022. A total of 41 students completed the baseline survey in 2021 – 21 students were selective participants, and 20 were non-selective participants. Selective participants scored significantly lower in both the SHS score ($p < 0.001$) and WWBI score ($p = 0.002$) than non-selective participants at baseline, but after the completion of the course, there was no significant difference between the two groups (p -value of 0.077 and 1.00, respectively). Participants had a significant increase in the SHS score (p -value = 0.002) and WWBI score (p -value < 0.001) when comparing baseline to post-course surveys in 2021.

Given the overwhelming participation of M1 students, the value of the course can be attributed to helping students transition to their new roles as medical trainees. As most students already knew wellness strategies, the course allowed learners to implement them by providing accountability, community, and conscious reminders to prioritize well-being.

The Effect of Advanced Age and Alzheimer's Disease Neuropathology on Levels of the Tight Junction Protein, Occludin, in the Brain Microvasculature.

The Effect of Advanced Age and Alzheimer's Disease Neuropathology on Levels of the Tight Junction Protein, Occludin, in the Brain Microvasculature. Ali Mirzazadeh

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Ali Mirzazadeh is a senior at the University of Washington Bothell aspiring for a career in internal medicine and pursuing a BS in Biology with a minor in neuroscience. As has come across numerous courses in chemistry, biology, and his own health issues growing up, he gained a strong passion for pursuing medicine.

To help nourish this passion, he actively seek opportunities in the areas of research, clinical work experience, and shadowing. Ali is someone who is determined to learn as much as he can and always to be open to facing new challenges. His attitude and energy bring motivation not only to himself, but to others around him.

He is currently looking forward to present his research in regards to the human brain microvasculature system and looking at how it is affected by neurodegenerative diseases like dementia.

Abstract

The reason for choosing to pursue this research began when my great uncle got parkinson's disease and I wanted to be apart of the group of people who did their best to mitigate the effects of neurodegenerative diseases. I approached the REED lab at University of Washington Medicine and focused on finding how to strengthen the parts of the brain that are affected by these diseases. I hope to find a way to strengthen the blood brain barrier and not allow for less adhesion amongst the tight junction proteins.

The blood-brain barrier (BBB) is a physiologic interface between the bloodstream and the brain. The BBB has tight junction (TJ) proteins that restrict blood and toxins from entering the brain and allow important nutrients and ions to pass through. In recent studies, we found a significant increase in the TJ protein, occludin, in microvessels (MV) isolated from the parietal lobe of female subjects of advanced age with Alzheimer's dementia (D) relative to aged match females (F) without dementia (ND) (n=8 D and 8 ND, age range: 79-99, mean: 93 years for both groups). There were no significant differences in occludin between MV of male subjects with and without dementia, who were of a much younger average age (mean: 74 years old). To further evaluate this finding, we examined MV in cut sections of the superior parietal lobes of a separate group of F subjects with D and ND via immunohistochemistry (IHC) (n=12 D, age range: 82-93 and n= 5 ND, age range: 83-98). We also measured levels and distribution of occludin in isolated MV from the same original group of female

subjects with D and ND utilizing immunofluorescence (IF). Preliminary analysis of IHC was not able to detect differences in occludin, but initial IF studies support higher levels of occludin in MV derived from F D subjects. Current studies are evaluating occludin localization in both groups of brain MV. In summary, we have data that occludin is increased in brain MV from female subjects of advanced age with D, relative to ND. Ongoing studies with IHC and IF will confirm differences in levels and determine localization. The increase in occludin in F D MV is an unexpected finding, and could reflect a compensatory mechanism within brain MV in the context of advanced age and Alzheimer's dementia.

HPV Education Advocacy

Riya Sood, Beatrice Carpo, Dr. Arthur Klein, Dr. Joerg Leheste

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Riya Sood is a third year medical student at the New York Institute of Technology's College of Osteopathic Medicine. She attended Nova Southeastern University, where she earned her bachelor's degree in biology. Through her undergraduate career, Riya combined her passions for both science and education as she devoted her time volunteering at an elementary school after-school program where she introduced students to basic science concepts. During her core clinical rotations in medical school, Riya developed a strong interest in women's health and initiated research efforts on how the role of public health policy affects health education in New York state. Through discussions with her peers, healthcare and educational professionals, Riya and Beatrice hope to provide realistic solutions on overcoming educational gaps on preventable cancers caused by human papillomavirus (HPV).

Abstract

There is a lack of national awareness of Human Papillomavirus (HPV) and HPV-related cancers due to an insufficient amount of public service announcements (PSAs), distribution of written materials, and discussion of HPV in academic curricula. Furthermore, the accessibility of consultation services from non-profit organizations and healthcare providers is limited. In line with the World Health Organization's goal to eliminate cervical cancer globally within the next century, it is important to start increasing awareness close to home and within our own state. A good plan of action for reducing HPV cancer incidence could be modeled after the HIV prevention and awareness campaign - a successful strategy used in New York State's education system to reduce state-wide rates of HIV. This would involve a survey of New York State public schools, revealing specific gaps in knowledge that can be isolated and addressed. Examples of distribution materials include digital and print resources emphasizing the HPV associated risk tied to gynecologic cancers and the importance of HPV vaccines. A need analysis indicates resources must be specifically targeted toward high risk and rural populations. Public data should be medically accurate and include multiple types of cancer (penis, anus, oropharynx), not just gynecologic cancer. Additionally, it is important to address the increasing rates of vaccine hesitancy due to the COVID-19 pandemic and the stigma of HPV as a sexually transmitted infection. Information to promote vaccination for both men and women to limit the spread of HPV needs to be strictly scientific and unbiased. We aim our efforts at meeting the goal of the World Health Organization to achieve decreased rates of HPV cancers by 2030.

Suicide in the Elderly

Beatrice Carpo, Daniella Abramov, Elizabeth Swezey, Chris Riis, Geyenne Lui, Nwe Oo Mon, Elisa Szydziak, Sara Cardozo-Stolberg, Rodrigo Blake, Vishes Mehta

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Beatrice Carpo is currently a 3rd year medical student at NYIT College of Osteopathic Medicine. She studied Neurobiology at Boston University for her undergraduate education.

Abstract

Suicide is both deeply personal, and widely prevalent, affecting individuals across the globe. Suicide accounts for 150,000 deaths annually in the elderly, which correlates to 20% of the suicides across the world (Chattun). The late life suicide rate is higher across both genders than it is for their younger counterparts (Van Orden), and with the geriatric patient population only increasing in size, this number is likely to grow. Suicide is a preventable cause of mortality and provides an opportunity for improvement in the care of older age adults. The cognitive and functional decline that occurs with aging has been identified as a risk factor in late life suicide (Fassberg). In addition to cognition as a risk factor, functional decline and physical illness have also been linked to late life suicide. Isolation, loss of independence, and illness can lead to feelings of loneliness, isolation, pain, fear of becoming a burden, and depression (Fassberg). Juurlink et. al. found that in addition to mental health disorders, COPD, CHF, urinary incontinence, and moderate to severe pain were identified as specific medical conditions associated with an increased risk of suicide. He also found that patients who were receiving treatment for multiple illnesses had an increased risk of suicide. Despite the prevalence of suicide in the elderly, older patients were less likely to receive a referral for mental health than younger age patients (34% vs 60%) (Ding).

The objective of this retrospective study is to identify what factors are contributing to suicide in elderly patient. Subject information will be obtained using the trauma registry, admitted with ICD-10 codes coding for suicide in a 10 year period from 2011-2022. Statistical analysis will be performed on the de-identified data collected.

Financial toxicity risk among patients with gastric banding complications in the United States: Analysis of the National Inpatient Sample

Dr. Yung Lee, Tania Kazi, Dr. Jerry Dang, Dr. Matthew Kroh, Dr. Aristithes G. Doumouras, Dr. Dennis Hong

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Tania Kazi is a medical student at the Michael G. Degroote School of Medicine with a keen interest in general surgery.

Abstract

Project Background: Laparoscopic gastric banding (LAGB) was historically among the most performed bariatric procedures but has fallen out of favour in recent years due to poor long-term weight loss and high revisional surgery rates. Significant financial hardship of medical care, known as “financial toxicity”, can occur from experiencing unexpected complications of LAGB. We investigated the risk of financial toxicity among patients being admitted for LAGB complications.

Methods: All uninsured and privately insured patients who were admitted for LAGB complications were identified from the National Inpatient Sample 2015-2019. Publicly available government data (U.S. Census Bureau, Bureau of Labor, The Centers for Medicare and Medicaid Services) were utilized to estimate patient income, food expenditures, and average maximum out-of-pocket expenditures. Financial toxicity was defined as total admission cost from LAGB complications >40% of post-subsistence income.

Results: Among survey-weighted total of 28,005 patients, 66% patients had private insurance and 44% patients were uninsured. Median total admission cost was \$12,443 (IQR \$7,959-\$19,859) and \$15,182 for those who received revisional bariatric surgery. Approximately 55% of the uninsured patients and 1% of insured patients were at risk of financial toxicity after admission for banding-related complications. Patients who had an emergency admission, revisional surgery, or post-operative ICU admission were more likely to experience financial catastrophe following admission ($P<0.01$).

Conclusion: About 1 in 2 uninsured patients who are admitted for LAGB-related complications were at risk of financial toxicity. In addition to surgical risks, providers should consider the potential financial consequences of LAGB when counselling patients on their choice of surgery.

Medical Product Industry Ties to Patient Advocacy Organizations: A Cross-Sectional Study

Shamik Bhat, MD, MHS Joseph Ross, MD, MPP, MHS Reshma Ramachandran

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Shamik is a 2021 graduate of the University of Colorado Denver, where he interned at the state legislature alongside his pre-medical studies and first discovered his interest in health policy. Now a second-year medical student at Yale, Shamik has continued exploring the intersection of healthcare and policy. He is currently investigating the influence of the pharmaceutical industry with faculty leaders and hopes to tie his policy interests into his clinical ones, which surround health outcomes for various cancers. After serving as co-president of Yale's AMSA Chapter in the 2021-22 school year, Shamik decided to expand his involvement by joining the national organization's PharmFree project as co-chair; he looks forward to continuing AMSA's invaluable work in medical education and policy.

Abstract

In this project, we investigate industry ties of the 50 highest-revenue patient advocacy organizations (PAOs) in the United States. We document pharmaceutical and medical device industry donations to PAOs and whether PAO board members and senior staff have prior or current employment ties to industry. Our findings show that the vast majority of PAOs accept industry donations, often with poor transparency, and that three-quarters of PAOs had board members or staff with industry ties. These connections to industry raise serious concerns around the independence of PAOs in their recommendations and patient education. PAOs' relationships with industry, both financially and of their leadership, should be made more transparent to build trust in their independence.

Women's Health Workshop: Primary Care IS Women's Health

Emily Marsico, Medical Student Roshni Wani, Medical Student Natalie Curtis, Medical Student Rana Youssef, Dean, College of Graduate Studies Professor, Family and Community Medicine, College of Medicine Director, Medical Ethics and Humanities Program Julie Aultman

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Emily attended Youngstown State University for undergrad and received a B.S. in Biology with Honors Scholar Distinction and Summa Cum Laude Honors. She now attends Northeast Ohio Medical University (NEOMED) where she is pursuing her MD. During her time in undergrad, she worked at the Primary Care Network, which is a FQHC. During this experience, she learned about the health disparities of those with a lower socioeconomic status. Through this, she was inspired to go to medical school to address these gaps in healthcare. Emily has continued to address health care disparities in Northeast Ohio by holding leadership positions through the SRFC at NEOMED. She has also been able to implement programs, such as a dietitian and exercise program to help the patients of the SRFC.

While in medical school, she found a passion for women's health and has pursued many opportunities that aim to close the gap between health disparities and medical education in women's health. She is currently working on a project that investigates sex-specific inflammatory responses in Alzheimer's Disease. She hopes to determine why women exhibit a more advanced AD phenotype when compared to men. She has also created the Women's Health Workshop to help facilitate the learning of women's health physical exam skills to her peers. Lastly, she is currently the American Medical Women's Association (AMWA) Student Division Conference Chair. This position allows her to pursue her passion in helping women achieve their full potential by providing opportunities to network, learn about women's health, and advance their career in medicine.

Abstract

Project Description

The Women's Health Workshop was created to educate and train first, second-, and third-year medical students on various women's health issues (e.g., sexual assault) and how to perform proper physical exam skills (breast and pelvic examinations, IUD insertion, and basic laparoscopic skills) with supervision from women's health experts.

Methodology

Four rotation stations were organized with 8 students per station in 30-minute intervals: pelvic exam, breast exam, IUD insertion, and laparoscopic surgery simulation. Additionally, a Sexual Assault Nurse Examiner (SANE) presented how to properly care for rape victim patients. Four Family Medicine and OB/GYN physicians trained and supervised students. A 15-item mixed methods survey was administered to assess students' baseline knowledge of women's health and clinical skills (pre-survey). A post-workshop, 14-item survey was administered to identify students' gained knowledge and skills, attitudes, and overall satisfaction (post-survey). Results were descriptively and thematically analyzed; a paired t-test will be used to compare pre- and post- data.

Results/Evaluation

Preliminary data showed improved learning outcomes for all participants. For the pre-workshop demographics (n=15 participants ranging in ages from 20-35 years), 93% of respondents identified as female, with one male respondent, and 46.7% reported interest in OB/Gyn or family medicine as a specialty choice. Example pre-survey results include: 68% of students answered 5 baseline comprehension questions correctly; 20% of students rated their knowledge of performing pelvic exams as “Very Knowledgeable” or “Extremely Knowledgeable”; 27% of students rated similarly in their knowledge of performing a breast exam; no students identified as more than “Moderately Knowledgeable” regarding laparoscopic techniques. Example post-survey (n=14 respondents) results include: 90.2% of students correctly answered the same five questions from the pre-test; 71% of students responded they were “Very Knowledgeable” or “Extremely Knowledgeable” about pelvic exams, 78% responded similarly regarding the breast exam and IUD insertion, and 21% responded similarly with laparoscopic techniques. Finally, 93% of respondents reported the workshop was “Very Relevant” or “Extremely Relevant” to their medical training, and 87% of students responded they would “Definitely” apply what was learned to patient care.

Conclusions

Overall, student participants were satisfied with their workshop experience and improved their knowledge and skills centering on women’s health. At baseline, our medical students lacked essential knowledge and skills and were generally not comfortable; targeted workshop interventions improved students’ clinical examination skills and knowledge, awareness of women’s health issues, and comfortability, which can lead to better patient health outcomes and satisfaction.

Genetic Engineering of Oleaginous Green Algae for a Healthy, Sustainable, and Affordable Human Milk Fat Substitute in Infant Formulas

Lauren Chiang, Jon Lin, PhD, Jeff Moseley, PhD, Sophie Lin, MSc, Marco Duenas, BS, Sabeeha Merchant, PhD

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Lauren Chiang was born in San Diego, California, and is currently an undergraduate student at the University of California, Berkeley. She is majoring in Genetics and Plant Biology and is working as an undergraduate researcher at the Merchant Lab under her mentors, post-doctoral researcher Jon Lin and principal investigator Sabeeha Merchant. Her work involves the genetic engineering of green algae to produce sustainable human milk fat substitutes in infant formula. Outside of the lab, she is involved in the UC Berkeley residential health worker program, is on the health advisory committee of the health center, founded a skills-building initiative dedicated to the disabled community, and is currently working towards an EMT license. Her achievements include receiving community impact awards from Down Syndrome Connection in the Bay Area, setting a world record in robotics, running the university's Summer Undergraduate Research Program, and receiving the leadership award from UC Berkeley. In the future, she plans to become a developmental pediatrician in the future and attain an MD Ph.D., as she hopes to create an intersection between her interests in human health, disability studies, technology, and environmental health justice within her work. She is excited to present her work at the AMSA convention!

Abstract

Background: Human milk fat (HMF) provides over 50% of the energy an infant requires as it contains a substantial amount of medium-chain fatty acids (MCFAs), which, when compared to long-chain fatty acids, are more easily absorbed and oxidized for energy and are especially beneficial to infants with immature digestive systems. The second distinct feature of HMF is the fatty acid positions in triacylglycerols (TAGs), where palmitic acid (C16:0) is preferably attached to the sn-2 position and thus provides digestive advantages like the prevention of loss of calcium. Presently, in the US, the fat composition of synthetic formulas is added from vegetable oils which often lack these features, thus, to address these challenges, this research aims to develop an HMF substitute for formula using genetically engineered green algae *Auxenochlorella protothecoides* (A. pro.) as it has a high oil content and genetic features that make it amenable for metabolic engineering.

Methods: The first aim of this project is to engineer an HMF-like fatty acid profile in A. pro. by introducing foreign thioesterases (ThEs) with desired chain-length specificities and the second aim is to relocate C16:0 to the sn-2 position of TAG by heterologously expressing C16:0-specific lysophosphatidic acid acyltransferases (LPAATs). Specifically, we designed and synthesized the codon-optimized genes encoding target enzymes and assembled them into DNA constructs which were transformed into A. pro. cells, where the resulting transformants were grown on selection plates. The insertion was verified with PCR genotyping, and the fatty acid composition of the transgenic lines was analyzed with GC-MS. This is an iterative process where we will engineer different ThEs (and ThE-interacting enzymes) and optimize the output by approaches like using various promoters, enhancing protein targeting, and testing different insertion sites.

Results: We made DNA constructs and successfully obtained transgenic lines expressing MCFA-specific ThEs from *Cuphea wrightii* (namely CwFATB). Our preliminary GC/MS lipid analysis data

showed that the desired pool of MCFAs was successfully generated in engineered *A. pro.* We also generated CwFATB2 transgenic lines with an alternative insertion site to compare the outcomes. Lastly, we constructed an expressing vector for a MCFA fatty acid synthase from *Cuphea wrightii*, CwKASA2, which will be introduced to the CwFATB2-expressing lines.

Conclusion: Our results demonstrate that we can obtain desired fatty acid profiles in transgenic *A. pro.* through our synthetic biology approaches. The enhancement of ThE activities and the engineering of LPAAT to increase sn-2 C16:0 is still in progress.

Carbapenemase Producing *Providencia Alcalifaciens* in Patient with Staghorn Calculus: A Case Report

Joseph White, Ameen Abdel-Khalek, James Rodriguez, Dr. Mobashir Hosameddin, Dr. Saul Gonzalez, Jagannath Kandadai

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Joseph White is a 4th year medical student from Nashville, TN. He is a student of Ross University School of Medicine, where he was a member of the RUSM AMSA chapter. He held previous roles on the AMSA executive board of clinical skills director, events supervisor, and chapter president. He is currently doing electives in Miami, Florida and has an interest in internal medicine.

Abstract

Providencia alcalifaciens is a member of the family Enterobacteriaceae, and has been commonly implicated as a causative agent of diarrheal infection, but may also cause urinary tract infections. Although its pathogenicity is not well known, many studies have suggested its mechanism of action involves the intestinal mucosal layer. This organism is not commonly pursued in research or investigation, and is not commonly detected in the clinical setting. This is especially true when combined with other disease processes, such as calculus formation. It is also not commonly a target of narrow-spectrum antibiotics. The advancement of antibiotic resistance, such as carbapenemase-producing strains, should bring more attention and routine investigation to this organism in the acute stage of infection. In this case report we introduce a 43-year-old Cuban female, who presents with a left-sided staghorn calculi and urine culture positive for carbapenemase-producing *Providencia alcalifaciens*.

Improving Residency Evaluation Systems in Central America: A Pilot Study

Blake Feldmar, Lindsay Bucklin, Laura Mercer, Ruben Fernández, Alfredo Beitia

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Blake Feldmar is a third-year medical student at the University of Arizona College of Medicine - Phoenix. Originally from Los Angeles, she attended the University of California, Berkeley for her undergraduate degree where she received a degree in bioengineering. She is currently interested in specializing in OB/GYN and will graduate with a Certificate of Distinction in Global Health.

Lindsay Bucklin is currently a third-year medical student at the University of Arizona College of Medicine - Phoenix. She grew up in Phoenix, attended Arizona State University, and has a background in Genetics and Global Health. In medical school, she is focusing on a Global Health Certificate with hopes of practicing medicine globally in the future.

Abstract

Background:

Receiving regular feedback during residency training is integral to training confident physicians. US residency programs are required by the Accreditation Council for Graduate Medical Education (ACGME) to provide regular feedback to residents, with evaluation of milestones ranging from medical knowledge and technical ability to softer skills such as professionalism and interpersonal communication. In Central America, although an accreditation committee exists to evaluate programs and administer a graduation exam to residents, no guidelines exist for providing feedback to residents during training. When interviewed, American College of Obstetrics & Gynecology (ACOG) representatives from Central America expressed desire for a standardized evaluation system for OB/GYN residents in order to systematically track their progress. Currently, Central American residents are evaluated using a binary checklist system of procedure steps, allowing no room for qualitative feedback.

After learning about American evaluation systems, the Central American ACOG representatives were interested in a standardized system that allowed for qualitative feedback on both soft skills and procedures. Our study seeks to determine whether implementation of a new resident evaluation system based on ACGME/ACOG guidelines could improve current OB/GYN resident training practices in Central America.

Methods:

Two OB/GYN residency programs in Central America will participate in a 6-month pilot program starting June 2023 for a new Google form-based residency evaluation system based on ACGME guidelines. Using the form, residents can be evaluated in two categories - procedures and milestones. For procedures, the attending rates the resident's completion of each step of the procedure, then gives an overall rating for the procedure using the 5-point Dreyfus scale. For milestones, the attending rates the resident's achieved level based on the competencies described. Every submission requires written comments about what went well and what could be improved.

To measure the success of the new residency evaluation system, surveys will be administered before and after the pilot period to residents and physicians. The surveys contain questions regarding satisfaction with various aspects of resident feedback systems. Answers to the pilot program surveys

will be compared to determine if the new system constitutes an improvement and should be continued long-term.

Hypothesized Results:

We hypothesize that the new evaluation system will allow for more robust resident feedback, making improvements on feedback quality and frequency while reducing subjectivity and creating standardization.

Future Directions:

If the pilot program is successful, we hope to expand this system to be utilized by additional residency programs in Central America and beyond.

Impact of Roe v. Wade Reversal on the United States Maternal Mortality Crisis

Shubhecchha Dhaurali, Anna Kheyfets, Paige Feyock, Dr. Farinaz Khan, Dr. April Lockley

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Shubhecchha Dhaurali is a recent Tufts University Community Health graduate and recipient of Tufts University's 2023 Presidential Award for Civic Life. As a maternal and reproductive health scholar activist and advocate, she serves as a founding member and research assistant at the Tufts School of Medicine's Maternal Outcomes for Translational Health Equity and Research (MOTHER) Lab and Center for Black Maternal Health and Reproductive Justice. Shubhecchha aims to pursue an MD/PhD degree to become a Physician Scientist in reproductive and maternal medicine and research.

Abstract

Background: In June 2022 the Supreme Court of the United States of America overturned their 1973 ruling on Roe v. Wade after nearly 50 years of precedent with their Dobbs v. Jackson Women's Health Organization decision. This decision removed federal protection for abortion care. Following several states enacted legislation that banned, limited and sometimes criminalized abortion provisions. Limited abortion access is associated with higher rates of maternal mortality and adverse maternal mental health outcomes. The United States is currently facing a Black maternal health crisis, where Black birthing people are more than twice as likely to experience maternal mortality and severe maternal morbidity compared to white birthing people. A complete ban on abortion could potentially lead to a 21% increase in pregnancy-related deaths for all birthing people and a 33% increase for Black birthing people. This project explores the impact of restrictive abortion laws on the Black maternal health crisis through a logic model.

Methods: A search of relevant English-language literature was conducted using PubMed, Google Scholar, and Web of Science on 1) abortion access, 2) restrictive abortion laws, 3) disparities in abortion access, 4) abortion provider diversity, and 5) abortion provider education. Abortion provider education includes medical school and residency for the purpose of this literature synthesis.

Results: Despite the existing abortion provider shortage outside urban areas, restrictive abortion laws in certain states will decrease already limited training opportunities in abortion care for medical professionals. Decreased numbers and quality of trained professionals in certain geographic regions combined with the racial inequities in maternal outcomes and a lack of abortion provider-patient racial and ethnic concordance will adversely and disproportionately affect the most vulnerable communities. There are existing barriers in abortion education in medical school and residencies in Obstetrics & Gynecology and Family Medicine, as well as a lack of diversity among abortion providers.

Conclusions: There is an immediate need for federal legislation codifying broad abortion care access into law and expanded access to abortion training across medical education. Expanding abortion education and increasing abortion provider diversity to better reflect the demographics of the communities served is necessary. While existing racial disparities in maternal health outcomes are already abhorrent, the Roe reversal and subsequent legislation attacking abortion access further will continue to widen such disparities and worsen maternal health outcomes. Abortion restrictions are not limited to abortion care – they affect health care across the life course and across the country.

Assessment of Accessibility, Availability, and Need of Cardiac Care at Primary Health Care Centres in Vadodara district of India

Urmil Shah, Shirish Rao, Ujjaini Rudra, Anoushka Arora, Sumanta Majumdar, Murtaza Gandhi, Naitica Darooka, Zahra Motiwalla, Priyansh Shah, Ami Bhatt

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Urmil Shah is in his Final Year of M.B.B.S (Bachelor of Medicine, Bachelor of Surgery) at Rajiv Gandhi Medical College and Chhatrapati Shivaji Maharaj Hospital, Thane, Maharashtra, India. Currently serving his internship, he is rotating through various departments, including internal medicine, surgery, pediatrics, psychiatry, family medicine and obstetrics and gynecology. Despite the challenging workload, he finds the experience to be incredibly rewarding and is learning how to diagnose and treat a wide range of medical conditions along with gaining valuable experience working with patients from diverse backgrounds. He is excited about the opportunities that lie ahead and is determined to become a highly skilled and compassionate physician who can make a difference in the lives of his patients.

Abstract

Background

Integrating screening and treatment for Cardiovascular Disease (CVDs) at the primary healthcare level has now become a necessity since Primary Health-Care Centres (PHCs) are the first point of contact, especially in rural areas, for patients to seek medical help. Given the knowledge of diagnosis and management of CVDs, PHCs may still considerably lack the necessary screening and diagnostic tools that can be used in the early identification of such conditions. The need assessment of ECGs as primary screening tools was essential to plan the deployment strategies for ECG at PHCs. Hence, this study was conducted to assess the accessibility, availability, and need for cardiac care with a special focus on ECG implementation at PHCs in the Vadodara district of Gujarat.

Methodology

A cross-sectional pilot study was carried out in 34 PHCs of Vadodara District of Gujarat, India between January to March 2022. Data regarding the accessibility of PHC, distance from the nearest Tertiary Health Centre (THC), availability of ECG, treatment protocols, competency of staff and burden of CVD was collected by interviewing the medical officer (MO) of the PHC. Distances were measured in kilometers (km) and travel times were measured in minutes. Descriptive analysis was performed using MS Excel. Based on the need assessment, digital ECGs were deployed at PHCs, staff were trained to use ECG and a telemedicine referral system with the nearest THC was established.

Results

The average distance to reach a THC from a given PHC was 37.1 km with an average travel time of 52.3 minutes via roadways. Only 58% of the surveyed PHCs have availability of ECGs, and only 44% had healthcare workers (HCWs) who knew how to operate and/or read an ECG. Only 24.24% PHCs were using ECG machines for MI patients. For management HCWs in 96% PHCs provided first line treatment after which most of the CVD cases were referred to higher centers. Lessons learnt were that there is an urgent need to deploy ECGs as well as train medical staff for interpreting and managing cases of MI.

Conclusion

Accessibility and availability of cardiac care services, especially ECGs is poor in PHCs of Vadodara district. MOs are unconfident in handling acute MI patients and they are directly referred to THCs. There is an urgent need for not only improved services but also efficient training of MOs in order to perform and interpret ECGs as well as effectively manage cases of acute MI.

Impact of COVID19 on the Prevalence of Induced Abortion at GPHC: An Institution Based Cross Sectional Study

Seona Wray, Doctor Gary Joseph

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Seona Wray is a 28-year-old Guyanese student of Georgetown American University currently in her 5th year of medical school. With an interest in women's reproductive health and surgery, the field of Obstetrics and Gynecology is a wonderful fit along with the immense fascination for the specialty.

It is Seona's hope to become the best OBGYN possible to provide for the people of her country with the best experience during their encounter, regardless of the situation or reason for that patients visit.

Outside of medicine, her interests are extensively including reading, baking, computer programming, photography and video editing.

Abstract

Background: The research aims to assess the effect COVID-19 has on the prevalence of abortion at a family planning clinic by comparing two periods, from February 2018 to February 2019 and from March 2020 to March 2022. The idea of the research was developed because of an encounter with a patient that was hospitalized for possible complications due to self-induced abortion.

Method: This is a medical chart review study in which data from any woman of reproductive age (15 to 49 years old) who visited the clinic from February 2018 to March 2022. Due to the gestational age, the study will exclude women who attended the clinic before February 2018 and after March 2022. Those with missing data on the reason for attending the clinic during the study period and with abortions done outside the facility will also be excluded. Variables collected include the age of the woman, nationality, ethnicity, level of education, occupation, marital status, parity, gestational age, and reason for requesting an abortion. Descriptive analysis will be used to calculate the mean, frequency and proportion and bivariate analysis will be used to assess the association between each independent variable and the outcome.

Result: Data collection is currently being gathered and will be completed before the end of April 2023. Initially, it is the view that there was a decrease in the number of abortion procedures during the pandemic period when compared to the pre-pandemic era. This assumption was made since there was an increase in Covid cases in the area and more restrictions being implemented because of this. The conservative nature of the country compounded with the inflation experienced at that time may have made the process of the procedure unlikely for some individuals.

Conclusion: The potential outcome for the research that is scientific data specific to this facility is limited and difficult to access. The results of this paper can be used to further establish research background well defined to this facility and the pandemic. With new updates being released about the effects that Covid-19 had on all sectors around the world, research designated to the facility during this time is severely lacking.

Analysis of Bone Regeneration in a Murine Calvarial Defect Model Using Immunofluorescent Staining

Adrienne Nemchik, Leya Groysman, Dr. Fernando Arias, Dr. Jenn Park, Alexandra Verzella, Dr. Roberto Flores, Dr. Piul Rabbani

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Adrienne Nemchik is a third year student at Macaulay Honors College at CUNY Hunter College where she is pursuing a degree in Biological Sciences on the pre-med track. She is a recipient of the John P. McNulty scholarship which allows her to continue research in the field of bone and tissue regeneration at the Rabbani Lab in NYU Langone. Under the guidance of Dr. Piul Rabbani, Adrienne is working on collecting and analyzing data on the effects of certain treatments on the healing of calvarial defects in mice. Upon completion of her undergraduate studies, she intends to apply to graduate school to continue enhancing her knowledge about biology and apply her skills in a setting that can help improve the quality of life for others, whether that be in research or a clinical setting.

Abstract

The effect of small extracellular vesicles (exosomes) derived from pediatric bone MSCs (pMSCs) on bone regeneration is not yet fully understood. The classification of cell types in new bone is important to better understand their functions and mechanics of bone regeneration. Multipotent stromal cells (MSCs) are progenitor cells capable of dividing and differentiating into specialized cells of the bone, cartilage, muscle, tendon, and other connective tissues. These cells are especially useful when tissues are damaged as they have the ability to replace lost or non-functional cells in an attempt to restore function to the area. Combining MSCs with a scaffold allows for an environment of potential bone growth and regeneration. Having a better understanding of the mechanisms involved in bone regeneration and identifying and characterizing the types of cells that are present can help shape future treatment options for damaged bone. To characterize and study the presence of different cell types and structures - given a dose of pMSC exosomes - in newly generated bone, multiple immunostains were performed for analysis of vasculature, osteoblast differentiation, and cell proliferation.

Characterizing Post-COVID Fatigue in People With and Without HIV

Ashley Zelaya, Armaan Jamal, Nuria Gallego Marquez, Alisha Dziarski, Samantha Walch, Arianna Romero, Christina Bunch, Enam Akasreku, Tamilore Adeagbo, Elizabeth Pasetes, Michael Peluso, Alan Landay, Annukka Antar

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

I am a student at Johns Hopkins University double majoring in Molecular and Cellular Biology and Medicine, Science, and the Humanities with a minor in Latin American Studies. My academic passions revolve around the biological sciences and tying that to the humanities

Abstract

Background:

HIV infection is a small but significant risk factor for severe illness and death from acute COVID-19, but it is unknown whether HIV is a risk factor for long COVID. Long COVID refers to new or lingering symptoms in the months after SARS-CoV-2 infection. Given that fatigue is the most commonly reported long COVID symptom, we assessed whether people with HIV (PWH) are more likely to report post-COVID fatigue than people who are HIV-seronegative (HIV-), and whether post-COVID fatigue correlates with biomarkers of inflammation and blood clotting.

Methods:

Participants with first SARS-CoV-2 infection were enrolled within 4 weeks of symptom onset or testing positive if asymptomatic (76 HIV+COVID+, 126 HIV-COVID+). Participants without a history of COVID-19 were also enrolled (55 HIV+COVID-, 69 HIV-COVID-). At enrollment, COVID+ participants reported pre-COVID fatigue using a Likert scale of 0-4 and the Fatigue Severity Scale (FSS). The same instruments were used at 1 and 4 months post-COVID symptom onset (COVID+) or post-enrollment in the study (COVID-). Data were assessed with Mann-Whitney U or Pearson's chi-square tests. Among participants who completed FSS at all three timepoints (pre-COVID, months 1 and 4), paired T-tests of FSS scores were performed (HIV+COVID+, 28; HIV-COVID+, 80).

Results:

Of 246 participants analyzed, 234 were COVID-vaccinated prior to infection/enrollment. The incidence of new/worsened fatigue at 4 months in HIV-COVID+ participants was greater than that of HIV-COVID- participants ($p=0.04$). A similar trend was observed in HIV+COVID+ compared to HIV+COVID- participants ($p=0.10$). FSS scores in HIV+COVID+ participants were higher at month 1 compared to pre-COVID ($p=0.03$) but not at month 4. FSS scores in HIV-COVID+ participants were higher at both month 1 and month 4 compared to pre-COVID (M1: $p=0.017$, M4: $p=0.011$). People with HIV did not report significantly more fatigue 1 and 4 months post-COVID than HIV- individuals. Fewer reported hours of exercise per week ($p = 0.01$) and fewer reported number of servings of fruit/vegetables per day ($p = 0.015$) correlated with worsened fatigue 1-month post-COVID in univariate analyses. Post-COVID fatigue did not associate with high sensitivity C-reactive protein or d-dimer at months 1 or 4.

Conclusion:

PWH and HIV- individuals both have worsened fatigue in the months after COVID-19. In this small study, PWH did not report worsened fatigue post-COVID compared to HIV- individuals. Poor diet and infrequent exercise were associated with post-COVID fatigue.

Medi-Cal Expansion and Factors Limiting Enrollment Amongst the Undocumented Patient Population

Olivia Goodman, Victor Escobedo, Deshae Gehr, Emilia Zevallos-Roberts, Daniela Wong-Pacheco, Juan Rivera, Dr. Stonewall Anderson, Dr. Nicole Cervantes

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Olivia Goodman is an MS2 at the Kaiser Permanente School of Medicine. She grew up in LA before going to UC Berkeley to study Public Health and Biology. Living in the Bay Area grew her passion about the promotion of health equity through coursework, volunteer work with unhoused populations through community clinics, and policy work with student government and the UC Berkeley administration to protect student health. After graduating she conducted population-level infectious disease research at the California Emerging Infections program. This involved bacterial disease surveillance as well as COVID research projects centered around unique risk factors for healthcare personnel during the COVID-19 pandemic. Since starting medical school she has been involved in organized medicine, housing policy research, and quality improvement projects at KP clinics, FQHCs, and local government agencies. She hopes to go into internal medicine and eventually have a career in both clinical medicine and advocacy.

Abstract

Background: Medi-Cal expanded coverage in May 2022 to include undocumented immigrants over the age of 50 who meet all other Medi-Cal eligibility criteria. There are concerns that the Department of Homeland Security's "public charge" rule could deter patients from enrolling in Medi-Cal, despite affirmations that this rule will not affect future citizenship should they enroll. The present study aims to understand the extent of this "chilling effect" and identify reasons, if any, deterring patients from enrolling.

Methods: This mixed-methods qualitative study describes the enrollment patterns of Medi-Cal eligible undocumented Californians over 50 since January 2023. Survey data has been collected from patients and enrollment specialists at a Los Angeles FQHC to capture enrollment status and reasons for not enrolling. The survey collection process will be expanded to additional Southern California FQHCs throughout 2023. Clinic data provided enrollment percentage of site-specific eligible undocumented patients, and CalHHS reported the number of eligible patients by county who enrolled in Medi-Cal and received benefits. Qualitative data in the form of free-text survey responses and qualitative interviews with enrollment specialists will supplement other outcomes.

Results: Los Angeles County enrolled 131,800 undocumented patients over 50 in Medi-Cal since May 2022. Of the 4,060 undocumented patients over 50 at JWCH Downey, 1,159 (28.5%) enrolled in Medi-Cal, 2,855 (70.3%) were previously enrolled in Emergency Medi-Cal and were enrolled in a health plan, and 46 (1.1%) declined. Of the 59 surveys completed by patients and enrollment specialists, 55 (93%) enrolled in Medi-Cal, and 4 declined (7%). Reasons given for non-enrollment included 'Public Charge' (n=2), 'Advice from an Immigration Lawyer' (n=1), already having health insurance (n=2), and 'Other' (n=2).

Conclusions: The preliminary findings of this study thus far indicate increased medical coverage among the undocumented community following the Medi-Cal expansion. Those who opt out of Medi-Cal are in the tiny minority citing public charge and legal advice as influential factors.

Discussion: Preliminary findings suggest that the 2024 Medi-Cal expansion will positively impact undocumented patients in the Los Angeles metropolitan area by increasing coverage. Study implications are limited by data collection coming from within the healthcare system and may miss perspectives from those who choose not to engage with the healthcare system due to access issues, fear, or mistrust. Continuing data collection will further our understanding of misconceptions about Medi-Cal expansion, allowing for targeted interventions such as educational materials to remove remaining barriers to care.

Examining the Differences in Mental Health Between Medical Students in the United States and the Caribbean and Analyzing the Contributors to Poor Mental Health

Jazzmyne Willingham

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Jazzmyne is a 2nd year medical student at Saint James School of Medicine in Anguilla. She has spent the last few years working on researching and advocating for mental health especially amongst children and young adults. Aside from mental health research she is interested in the topics of surgery and public health.

Abstract

Because mental illness and suicide rates amongst medical students are some of the highest in the country, it is important to examine the cause of stressors so that they can be prevented. Comparing the differences in mental health between US and Caribbean medical students offers some insight into the causes of poor mental health amongst medical students and how we can make positive changes to improve mental health in these groups. While there are only a few ways to earn a medical degree, the journey through medical school varies substantially. Medical schools in the United States may be closer to home, have larger class sizes and perhaps more academic pressures. Caribbean medical students attend medical school, usually far from home, but have access to warmer weather year-round and amenities such as resorts and beaches. There may be various similarities between life as a Caribbean medical student and a US medical student, but this study will help identify the differences and how they affect mental health. The mental health of medical students from different locations, ages, ethnicities, and year in their program will be evaluated in this study. The study will be completed by distribution of a survey in which all participants are given the same electronic form. Surveys will be completed by current US and Caribbean medical students. It is predicted that the findings will indicate the need for improved systemic awareness, guidelines for students' mental health and amendments that can be made to lessen the burden on students at all levels of their medical education.

Creating the Distinction in Bioethics Program

Yechaan (Eric) Joo, Dr. Michael Shapiro

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Yechaan (Eric) Joo, MBE, MPH, is a MS3 at Rutgers New Jersey Medical School. He received his MBE from Harvard Medical School and MPH from the Harvard T.H. Chan School of Public Health. At HMS, Yechaan was a member of the Surgical Ethics Working Group and completed a Capstone project on the impact of ethics M&M on surgical education at the Beth Israel Deaconess Medical Center in Boston, MA. As an aspiring surgeon interested in bioethics and public health, Yechaan plans to pursue a residency in surgery upon graduating from Rutgers NJMS.

Abstract

The COVID-19 pandemic unveiled longstanding health disparities in the U.S. It is now more important than ever to prepare our future physicians-in-training to be able to address and navigate such issues. Additional coursework in bioethics would be able to meet some of this need, yet the high standards and rigors of the current medical school curriculum make it difficult to incorporate such courses. Therefore, we sought to create a new Distinction in Bioethics Program at our institution where selected students would be able to engage in additional bioethics scholarship that is separate from the school curriculum and apply this knowledge and experience to their future careers. To gauge potential interest in this new Distinction in Bioethics Program, a five-question survey was sent to all medical students at our institution using email. Total number of respondents, n=86, with an overall response rate = 12% (N=736). Among the 86 respondents, 48 selected "Yes", they would be interested in applying (56%), 27 selected "Maybe" (31%), and 11 selected "No" (13%). Subsequently, a proposal containing the survey results and an outline of the Distinction in Bioethics Program curriculum was submitted and officially approved by the medical school curriculum and faculty committees. The Distinction in Bioethics Program recently accepted its first MS1 applicants in 2023. As the program expands and develops, we expect it to have a deep impact on our students.

AMSA Origins: Kansas College of Osteopathic Medicine

Aaron DeWeerd, Tiffany Lui, Susan DeRiemer PhD

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Aaron DeWeerd is an OMS-I at Kansas College of Osteopathic Medicine.

Abstract

Kansas College of Osteopathic Medicine (KansasCOM) is the newest medical school in the country and the newly formed AMSA chapter is among the charter student organizations. It is the only organization with an international network of both osteopathic and allopathic medical students open to all. The vision for AMSA at KansasCOM is to create a cohort of individuals who are passionate about healthcare and improving the health of the community in which KansasCOM students, connecting them with their AMSA peers, and utilizing the resources AMSA provides to help them develop into healthcare leaders.

The leadership team identified two major goals for this first year: Organizational growth and mission-focused service. The recruitment strategy consists of three steps aimed at increasing chapter membership. The first step spotlights the benefits of national AMSA membership. The second highlights the organization's proven efficacy in the local community, showcasing the service and ongoing advocacy efforts carried out by its member and supporting community events to increase engagement and foster a thriving AMSA chapter at KansasCOM. The final step was programing that focused on key student needs, which for this inaugural class included enhancing the medical education experience through workshops and providing input on the curriculum to faculty.

The major achievements this year have been: 1) Electing a set of officers; 2) Registering the KansasCOM AMSA chapter; 2) Getting approval for the organization bylaws; 3) Recruiting 37 members (41% of class); 4) Hosting two education-focused workshops; 5) Identifying representatives to attend the national AMSA meeting and complete Chapter Officer. The chapter's goal is to average a 5% growth pattern per class, with the aim of reaching a membership enrollment rate average of greater than 65% in each class.

Establishing a new AMSA chapter poses considerable obstacles, as the chapter must lay down the groundwork for future success. The AMSA chapter at KansasCOM is continuously searching to establish its own identity while simultaneously aiming to be a driving force of innovation for medical students who strive to provide care to the local community. The three-step approach to recruitment is the chapter's strategy to increase activity that is focused on elevating the educational experience of the student as well as emphasizing and providing public health initiatives. Through these efforts, the AMSA chapter at KansasCOM seeks to establish itself as a leading organization in healthcare advocacy and student education, providing members valuable opportunities to grow both personally and professionally.

Reviewing the impact of gender inequity on access to organ transplantation

Seohyun Kim

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Seohyun Kim is a first year medical student, class 2022-2016, at Touro University California College of Osteopathic Medicine. Additional to her medical studies, she is passionate about learning about social justice, especially gender studies, and its impact on medicine. She hopes to become a physician who can be an advocate for her patients, respect them individually, and improve their quality of life.

Abstract

Project Background: For patients with end-stage organ failure, organ transplantation is a standard option for many patients to increase the chance of survival and quality of life. To be considered for organ transplantation, the patients must meet several medical criteria under the physician's decisioning making for the procedure. Gender (or sex) is a crucial but often neglected factor that influences many stages throughout the process, from the initial physician referral to waitlist placement and recipient selection. The objective of this study is to identify underlying gender inequity affecting the accessibility of the common organ transplantation procedures.

Methods: A systematic literature review was conducted through the PubMed database to understand the relationship between gender and the process of organ transplantation. The data research included the most common organ transplant procedures including kidney, liver, lung, heart, and hematopoietic stem cell transplantation. The term "sex" and "gender" were used interchangeably in most of the studies, but some studies specified the distinction between the effect of biological attribute from sex versus the effect of implicit gender bias. The inclusion criteria were 1) key words such as "sex," "gender inequity" combined with "organ transplant" were used to identify studies 2) relevant articles that were published within the past 10 years. The result section further explains the data obtains from this review.

Results: The systematic review revealed the presence and impact of gender inequity throughout several steps of the common organ transplantation procedures. The reasoning of this disparity can be separated into the following categories: implicit gender bias throughout the referral process, built-in inequity in scoring system, and imbalance caused by biological attribute from sex. This leads to women having a lower referral rate to the transplant waitlist, a lower qualification rate for transplantation, and a higher rate of negative effects caused by standard organ transplantation treatment plans. Lastly, studies showed that gender also interacts with other SES categories such as race, ethnicity, or education, so understanding the intersectional relationship is crucial to create a balanced system for organ transplantation.

Conclusion: This review concludes that women have difficulties accessing organ transplantation compared to men with the same severity of disease in different types of common organ transplantation procedures and approval processes. As physicians, we should acknowledge the need to conduct future studies to confirm and mitigate the relationship between gender and patient accessibility to organ transplant.

Impact of Hospital Compassion Center on Healthcare Provider Burnout and Empathy

Sean Sipes, Adina Greene, MD Cheryl O'Malley, Wade Sumner, MD Miriam Robin, Hannah Sullivan, MD Jennifer Hartmark-Hill

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Adina Greene is an MS3 at the University of Arizona College of Medicine-Phoenix (UACOMP). Adina graduated from UC Berkeley where her passion for narrative medicine and bioethics developed. Currently, Adina is pursuing a certificate of discrimination in Health Humanities at UACOMP.

Abstract

Compassion can be defined as three parts: recognizing suffering, feeling for the person suffering, and a motivation to act to alleviate the suffering. Although they are drawn to their profession with a sense of purpose and service, there are many pieces contributing to compassion fatigue (CF) in health care, such as high-stress roles, significant workload and the inability to spend ample time with patients. The pandemic put additional extraordinary pressures on this already vulnerable group of healthcare providers. Problems resulting from CF are multifactorial, including decreased concentration/productivity and high turnover rates of staff, which has a direct effect on patient satisfaction and safety. Notably, a decreased compassion score in nurses has been shown to correlate with an increase in the number of medical errors.

In the prospective analysis on the 11-month Applied Compassion Training (ACT) program in 2021, there were significant decreases in perceived stress ($P < .001$) and improvements in the ability to cope with the psychosocial demands of care ($P < .05$). This study inspired the development of a local compassion center, a physical space in the hospital that includes a poetry pharmacy, wellness areas, and compassion card activities. The CC will serve the 5,000 employees, 2,401 students per year, 2,464 medical staff, and many volunteers who directly or indirectly care for patients and their families.

All visitors to the Compassion Center will be invited to take place in the retrospective study through iPads placed in the room as they enter and as they leave. Demographic information will be included in the survey questions along with an abridged version of the self-compassion scale short form (SCS-SF). Burnout rates will be analyzed from an annual survey conducted by the hospital. Results from this study will be compared using Chi-Square tests, using a confidence interval of 95%. We also plan to do a 6-month follow-up cohort to see if results are sustained over time and correlate with the amount of visits to the compassion center. We hypothesize that individuals visiting the compassion center will show a lower burnout rate and higher compassion score after spending time in the center.

Quantitative Research Project to Compare and Evaluate the Preparedness of Community College's Premedical Students for Professional School.

Jordan Shrader, Tyra Lee Brett, Carson Cornock, Irabel Sanchez, Kristina Shield, Amanda Dimauro

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Mrs. Jordan Shrader is a non-traditional student who graduated high school in 2014. She joined the military after high school and worked as an Intelligence Specialist for 7 years in the United States Navy. She has since left the military and currently works as a Contractor for the United States Government. She currently has a Medical Pathways A.A. (2022), will graduate with a Biotechnology A.S. after the summer semester (2023), and has applied for the nursing program at Hillsborough Community College in hopes of pursuing a BSN. Her ultimate goal is to become a Nurse Practitioner.

Abstract

This research project is a continuation of a project that was started in 2021-2022, providing a quantitative evaluation of community college premedical students for their professional schools in 2022-2023. A short survey was sent out and invited premedical students to participate in the survey. Results indicated an increase in student preparedness for professional schools compared to the 2021-2022's survey results.

How do we define treatments for patients with a TBI and when can we transition that patient to end-of-life care?

Miss Kenzie Berkley, Miss Kimberly Mulder, Miss Danielle Monaco, Miss Jazzmyne Willingham

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Kenzie Berkley is currently a second year medical student at Saint James School of Medicine in Anguilla. She completed two undergraduate degrees at McMaster University in Ontario, Canada. The first degree was a Bachelor of Arts in psychology. The second degree was an honors Bachelor of Science in Neuroscience and Human Behavior with a minor in mental health and addiction. Kenzie has been involved in various organizations at Saint James School of Medicine including serving on the AMSA board for her chapter as the chair of fundraising. Kenzie has a passion for neuroscience and serves as the president of her school's clinical focus group in neurology. She is also a member of the American Academy of Neurology and has attended their fall conference this past year.

Abstract

The aim of this project is to conduct a literature review to investigate how to define a person in a coma and the steps and procedures that would help that patient transition to end-of-life care. Conducting research for this project helps physicians and health care teams make better informed decisions regarding end-of-life care for comatose patients. Research Data is collected and summarized using articles published during the years 2019 to 2023. Search criteria for the articles includes human subjects, both male and female, aged 0 to 100. Search terms such as traumatic brain injury, neurological assessment tools, coma patient, physician assisted suicide, euthanasia, end of life care, levels of awareness, and disorders of consciousness are used to find relevant articles. A combination of search engines and different combinations of search terms are utilized to ensure a variety of information is found from different sources. The articles are reviewed and utilized to gather results to further support the purpose of the project. Results are formulated into tables, charts, and figures to better represent the findings of the research. Early findings of the project highlight definitions of disorders of consciousness and patients in a coma along with definitions of euthanasia and physician assisted suicide for end-of-life care. Data collection for the project is going to be complete by May 15, 2023. This project will provide physicians with information to make informed decisions for patient care. This research has the potential to be a resource to help initiate policy change and reform to ensure patients in coma will get the best standard of care during end-of-life care.

Can Incorporation of Psychological Assessments During the Medical School Application Process Aid in the Decrease of Completed and Attempted Suicide Among Medical Students.

Kendra Cruickshank

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Third year medical student at Washington University School of Health Sciences.

Abstract

Background:

Medical school is a challenging and stressful environment that requires students to have robust mental health and resilience. However, the demanding nature of medical education can negatively impact students' mental health, leading to burnout, depression, and even suicide. Compared to the general population, medical students are at an even higher risk of developing depression, anxiety, and suicidal ideation. Depression and anxiety among medical students is 27.2% and 33.8%, respectively. Similarly, the incidence of suicidal ideation among medical students was higher than among the general population. These statistics indicate that the mental health of medical students is a growing concern that needs to be addressed. Psychological assessment is one of the methods that can be employed to identify students who are at risk of developing mental health problems.

Methods:

First, a search of relevant English-language literature will be reviewed using several databases, including PubMed, PsychINFO, and Google Scholar, using keywords such as "mental health," "medical students," "admissions," "suicide among medical students," and "evaluation." Studies included will examine the prevalence of mental health issues among medical students, the impact of these issues on academic performance and overall well-being, and the effectiveness of mental health evaluations in identifying at-risk students. Secondly, the PHQ-9 (patient health questionnaire) will be used to assess the severity of depression in the past weeks. Thirdly, developing psychological assessment questionnaires will determine the students' emotional well-being, stress levels, and coping mechanisms. This exploration will help to identify the critical need for psychological assessments during the application process for medical students at high risk for completed suicide and depression.

Results:

Though this research is in the early stages of its methodology, the deliverable results will include the development of psychological surveys that will assess students' overall mental health, the responses to the PHQ-9 and questionnaires, the literature review, and the overall implementation of these assessments based on the methodologies.

Conclusion:

The results of this study suggest that administering a psychological assessment to medical school applicants is a feasible method for identifying students at risk of developing mental health problems. This method could be used as a preventative measure to decrease the incidence of depression—

anxiety, and suicidal ideation among medical students. Future research should explore the effectiveness of this method in reducing the prevalence of mental health problems among medical students.

Integrated 6-Year Residency and the Changing Landscape of Cardiothoracic Surgical Training in the United States

Christine Lee

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Author is a current MS3 with a strong interest in diversity, equity, and inclusion in medical education. Currently, the author is contemplating a career in academic medicine, focusing on issues of student growth and development.

Abstract

Background

While the traditional pathway for cardiothoracic surgical training had been 5 years of general surgery residency followed by a 3-4 year cardiothoracic fellowship, the first integrated 6-year (I-6) cardiothoracic surgical residency was established in 2007. Initially after the implementation of the I-6, a dramatic increase was seen in applications to thoracic surgery programs, driven by international medical graduates with strong caliber applications, numerous peer-reviewed publications, and higher degrees¹. However, since then, there has been a growth of US senior applicants, with matched I-6 applicants averaging the highest Step 2 scores, AOA membership, and graduation from a top-40 medical school across the board².

Meanwhile, only 5% of the currently practicing cardiothoracic surgeons are women. Although women comprise 20% of the cardiothoracic residency, lower rates of marriage and childbearing seen in women in cardiothoracic surgery compared to their male peers³. This study aims to explore how women, underrepresented minorities in medicine, international medical graduates, and DO graduates have fared with the I-6 pathway since its implementation 16 years ago.

Methods

Data of applicants and matriculants to thoracic surgery (integrated) residency programs was compiled from ERAS (Electronic Residency Application Service), AAMC (Association of American Medical Colleges), and NRMP (National Residency Matching Program). Then, trends in factors such as gender, ethnicity/race, AOA membership status, research experiences, abstract/presentation/publications, USMLE scores were examined.

Results

Overall, there has been an increase in applicants to thoracic surgery programs from 2018 to 2022, with the average number of applications per program increasing from 71.2 to 138.3 applications, almost a 95% increase in 4 years. While IMG applicants have increased, the rate of US-MD graduate applicants is higher, with US-DO graduate applicants plateauing. From 2018-2022, the number of women applicants has risen from 32 to 39 applicants, while men applicants have risen from 90 to 147. Similarly, applicants identifying as Black have risen from 5 to 15, while applicants identifying as white have increased from 66 to 86.

Conclusions

The data shows that the I-6 program has attracted a less diverse applicant pool, and thus, further intensifying the gender gap in matched cardiothoracic residents. More investigation needs to be done to clarify why these trends continue to occur and how to incorporate changes that could be more inclusive of all applicants.

Health Professionals Network for Tigray Annual Impact Assessment 2022 - Helping Bridge the Gap in Humanitarian Response

Robel Tesfay, Hilena Tadesse, Dr. Semhal Ghessese, Dr. Betsir Zemen, Frewoini Kidanemariam, Dr. Yonas Atakilti, Sela Gebremeskel, Eden Kassa, Dr. Rishan Desta

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Robel Tesfay is a third-year medical student at Meharry Medical College. He was born and raised in Ethiopia and moved to the United States in high school. He received his bachelor's degrees in Biological Sciences and Public Health Science from the University of Maryland College Park, where he graduated with an honors citation. He then earned a Masters of Public

Health degree with a concentration in Global Health from The George Washington University. He was awarded an NIH post baccalaureate research fellowship in 2018 and completed two years of training at the National Cancer Institute, Center for Global Health.

Robel is passionate about patient centered care and health equity advocacy. He has participated in research efforts ranging from basic science to clinical, epidemiological, and community-based research including partnerships with Stanford and Vanderbilt Universities. He has also led and contributed to peer-reviewed publications and presented at various conferences/meetings. Robel's current research interests include investigating the long-term health and economic impact of primordial, primary, and secondary prevention strategies.

Robel is currently in the certificate in health policy program at Meharry and participates in policy advocacy efforts at local and national levels. Additionally, he has engaged in various community service projects including leadership roles in Public Health Without Borders, Students National Medical Association, and Health Professional Network for Tigray. Robel has vast experience in mentorship including roles as a teaching assistant and resident advisor as well as partnerships with Pre-college Programs to provide tutoring and career counseling to students.

Robel is a recipient of the Bloomberg Scholarship at Meharry Medical College. He is also a participant in the Alliance for Inclusion in Medicine leadership program through Johnson &

Johnson and National Medical Fellowships. He has a strong academic record previously earning various merit-based recognitions from Omicron Delta Kappa and Delta Omega honorary societies.

Abstract

The project summarizes the 2022 annual impact analysis of HPN4Tigray, a non-profit organization created in response to the humanitarian crisis in Ethiopia.

A Rare Finding of Incidental Intracholecystic Papillary Neoplasm Following Acute Cholecystitis Management

Miss Sara Arfan, Miss Lavanyah Anbazhagan

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Sara Arfan is a senior-year medical student at the Windsor University School of Medicine with a special interest in preventative medicine and primary care.

Abstract

Intracholecystic papillary neoplasm (ICPN) is a benign, lesser-known tumor of the gallbladder lining, which although has a better prognosis carries the potential of spread to other organs. Although advances in imaging technology have enabled accurate diagnostic ability, we present a unique case of ICPN that was incidentally diagnosed in a 72-year-old Eastern European woman following cholecystectomy for acute cholecystitis. Risk factors of ICPN onset, prognostic factors, surveillance guidelines, and follow-up protocols are poorly understood, which prompts reporting of varying clinical presentations to improve earlier detection and patient outcomes. The presentation of individual case reports can help address these gaps in knowledge and provide beneficial perspectives on the disease.

This project is a case report of a singular patient presenting to the emergency department who after being diagnosed with acute cholecystitis and undergoing laparoscopic cholecystectomy, was unexpectedly found to have ICPN a week after discharge. It is crucial to report cases of ICPN for a number of reasons. First, it increases disease awareness and helps identify varying clinical presentations for earlier diagnosis and prompt management. Secondly, case reports of individual patients can be used to identify rare ICPN subtypes and their clinical characteristics.

A week after laparoscopic cholecystectomy for the treatment of acute cholecystitis, the patient had a unique presentation that involved right flank pain with radiation down to her right leg, a “lump” in the right upper quadrant which was felt by the patient, and abdominal pain after meals. On imaging, we found a thick gallbladder wall with a rough, polypoid cheese-like lesion at the fundus. The histopathological evaluation confirmed that the lesion was an anterior ICPN.

ICPN is a rare neoplasm that can be difficult to detect on conventional imaging modalities. Although rare, a small fraction can evolve into invasive carcinoma. Our case illustrates how often these rare lesions can go undiagnosed due to the lack of surveillance and imaging protocols. This unique incidental case of ICPN adds valuable information to the existing literature as the disease onset and progression are unexpected and confirms recent findings which highlight the use of contrast-enhanced ultrasound (CEUS) and magnetic resonance imaging (MRI) to be superior in detecting ICPN compared to the traditional conventional ultrasound and computed tomography (CT) imaging. The lack of surveillance and diagnostic protocols can lead to later diagnosis at advanced stages of malignancy with a poor prognosis, compared to patients diagnosed earlier and treated with prompt surgical removal.

The Gun-Violence Epidemic is the New Major Public Health Crisis: A Call for Research to Facilitate the Development and Implementation of Interventional Gun-Violence Reduction Strategies

John Vigil, Samantha Lahav

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Passionate rising 4th year medical student at the GWU SMHS MD program and future OBGYN resident who strives to promote women's health, reproductive rights, gender equity and advocacy. With a strong background and experience in medical knowledge, clinical and literary research, health-tech innovation, women's health, mental wellbeing, community outreach and public health initiatives, my vast interests and objectives extend beyond my passion of becoming a Doctor of Medicine. My ultimate goal is to truly become a Future Physician For Change by not only incorporating an interdisciplinary approach into my own practice of medicine; but even more so, through becoming a leader who will pave the way towards improving healthcare practices while advocating for and to both public and population health and well-being, nationwide and even globally.

Abstract

Firearm-related violence in the United States(US) has been on the rise for decades, without any apparent potential of legislation-related resolve in the near future. The recent substantial increase in gun-related violence has been classified as a major public health crisis; this project investigates the multifactorial contributing components of the gun violence epidemic in order to determine the potential areas for intervention. The COVID-19 pandemic and its associated downstream consequences leading to mental illness elevations in the setting of the concurrent gun violence epidemic may indicate a positive correlation between these three public health crises; however, there is limited data available for conclusive evidence due to lack of funding, therefore, this epidemic calls for more research. The eventual application of evidence-based research into the development of a gun-violence reduction intervention program of improving coverage and access to mental health care services and implementing firearm safety and mental health screening protocols via educating physicians and healthcare providers nationwide could potentially help to mitigate this epidemic; ultimately, however, advocating for legislative action by congress with improved cautionary screening policies will be vital to gun violence reduction.

Risks and Benefits of Birth Centers

Rosemary Gomez

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

Fourth year medical student that participated in the AMSA Reproductive Health Scholars Program that led to the inspiration of this project.

Abstract

This project is intended to provide information about birth centers specifically to people of underrepresented and underserved communities to then make an informed decision with healthcare professionals about what birth setting goals they want for themselves. There are major concerns about birth settings in the US such as high rates of maternal and neonatal mortality and morbidity, risk of neonatal mortality, and structural racism and discrimination. Birth centers were created as an alternative option for childbirthers that has its risks and benefits as well according to research studies. Benefits include lower rates of maternal intervention, increased breastfeeding initiation, reduced inequities and birth outcomes, and greater satisfaction and cost savings. Risks include perinatal death (1-2 in 1,000), and neonatal seizures and serious neonatal neurologic dysfunction (0.4-0.6 in 1,000). As more research and discussions are developing, future directions of birth centers are being considered such as quality improvement initiatives, increase access to facilities, expand insurance coverage, and increase pipeline for maternity and newborn care workforces to be representative of the population that need to be served.

Community-Based Intervention and Trust Establishment in Underserved Latino Communities With Latino Medical Student Association (LMSA)

Ashley Caron, Melanie De La Cruz, Jocelyn Gaona, Marissa Solarzano,, Patricio Ruano

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

NA

Abstract

The objective of this year-long project and activity tracking was to build the leveraging power of Michigan State University's College of Human Medicine Grand Rapids LMSA Chapter within our medical school, engage with our local Latino community, and establish our chapter and medical school as trusted sources of community medical education and information. We also hope to share our foundation with other medical student associations.

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When SARS-CoV-2 Collides with HIV in Human Bronchial Epithelial Cells: Spotlights on Immune Responses

Ava Oliver

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Collaborative Education as a Conduit to Build Trust and Skills in Black Birth Workers

Libertie Broussard

28th Annual Poster Session, Phoenix CDE, Third Level, June 16, 2023, 5:00 PM - 7:00 PM

Biography:

NA

Abstract

The objective of this study was to create a structured collaborative curriculum between community doulas and academic obstetric providers to address common prenatal and postpartum pregnancy complications that disproportionately affect Black birthing people.

Developing Outreach and Fundraising Efforts to Develop Pre-Medical Student Mentorship Program

Emily Moore

Biography:

na

Abstract

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