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UNIVERSITY OF PUERTO RICO

43RD ANNUAL RESEARCH AND EDUCATION FORUM

MARCH 29-31, 2023

HYBRID MODALITY



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PRHSJ
Puerto Rico Health Sciences Journal
ABSTRACT SUPPLEMENT

Abstracts*

4301

Prevalence and costs of dementia in Puerto Rico and the United States: Estimates from Medicare data

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Background & Objectives: Neurocognitive disorders (NCDs, or dementias) are disabling conditions that affect mostly people 65 and over (65+), who represent 20.83% of the Puerto Rico (PR) population. Previous research suggests that Alzheimer's Disease and Related Dementias (ADRD) are more prevalent among Hispanics and African Americans than Whites. We wanted to: 1) calculate an accurate estimate of the prevalence in PR of ADRD and other Chronic Conditions that are considered risk factors for ADRD; 2) compare ADRD prevalence in PR and USA; 3) compare ADRD prevalence among men and women in PR. We were also interested in comparing Medicare per-capita spending (PCS) in PR vs USA. These data are necessary to develop public policies for the design of disease prevention and management interventions; also, it is imperative to estimate the cost of providing care for ADRD in PR for healthcare planning purposes. Methods: We extracted and analyzed prevalence and PCS data for Puerto Rico and the USA (National) from 2007 to 2018 from the Center for Medicare Services Chronic Conditions Warehouse. For each year (2007-2018), we compared data for PR vs. the National aggregate in terms of prevalence and PCS, for ADRD and Chronic Conditions of interest. Results: Prevalence of ADRD in PR for 2018 was 50% higher than previously estimated, and 33% higher than in USA. Prevalence of ADRD among PR women was between 35-50% higher than among men. Medicare PCS in USA was more than 150% higher than in PR for most years. Conclusion: Prevalence of ADRD in PR is much higher than previously thought, particularly among women. However, Medicare PCS is about half than that in USA. Aggressive public prevention policies must be implemented to lower this prevalence, and steps must be taken to make sure Medicare PCS in PR matches that in the US for these costly conditions.
Acknowledgements: Unfunded research.

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Liderazgo organizacional de la Universidad de Puerto Rico en torno al modelo global de Universidades Promotoras de la Salud: el caso del Recinto de Río Piedras

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Trasfondo y objetivos: El entorno universitario diverso y dinámico posee una amplia gama de posibilidades para contribuir al bienestar de la comunidad. El modelo global de Universidades Promotoras de la Salud presenta una guía para desarrollar estrategias y políticas institucionales que propicien ambientes y acciones favorables a la salud. La implementación de este modelo de Promoción de la Salud (PS) es fundamental para responder a los desafíos de salud pública que enfrenta la sociedad en un mundo globalizado y con un ritmo de vida cada vez más acelerado. El propósito de este estudio fue determinar cómo se ejerce el liderazgo en el Recinto de Río Piedras (RRP) en torno a la PS de los estudiantes. Método: Enfoque metodológico cualitativo de diseño de estudio de caso que permitió conocer la perspectiva que algunos directivos tienen de la PS y como desarrollan su liderazgo en esta área. Se utilizaron dos estrategias de recopilación de información: entrevistas y revisión de documentos institucionales. En el proceso de análisis inductivo de los hallazgos se codificó la información obtenida de las entrevistas y se clasificó por ejes temáticos de acuerdo con patrones identificados. Hallazgos: El RRP desarrolla actividades relacionadas con la prevención de conductas de riesgo y ofrecen servicios relacionados con la salud física y mental a los estudiantes. Sin embargo, la mayoría de las acciones que desarrollan tienen un enfoque biomédico y preventivo. Los directivos entrevistados reconocen

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la necesidad de ampliar y mejorar los programas de prevención y PS. Ellos consideran que es primordial la implementación de una iniciativa que integre los componentes de la PS y articule el trabajo de las diferentes dependencias. Conclusiones: El RRP debe tener una política institucional en PS que garantice la sostenibilidad de los programas, así como de un esfuerzo colectivo que, cumpliendo con su misión principal, sea capaz de consolidar con eficacia, un modelo de promoción de entornos saludables.

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Burnout during Surgical Residency in a Hispanic Population

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Introduction: Medical trainees are subject to significant stressors (e.g., burdensome work schedules, sleep deprivation) that adversely affect their work performance, quality of life, and patient care. These stressors can lead to emotional and physical distress, increasing the risk of resident burnout. Despite extensive research efforts regarding medical resident burnout, literature regarding the prevalence of burnout in Hispanic surgical residents has not been evaluated. This study aims to assess burnout in the medical field by exploring burnout rates and psychiatric comorbidity among Hispanic surgical residents. Methods: A three-part cross-sectional survey was distributed to Hispanic surgical residents at the University of Puerto Rico Medical Science Campus. Surgical residency programs included Orthopaedic surgery, urology, otolaryngology, general surgery, ophthalmology, obstetrics- gynecology, and maxillofacial surgery. The survey consisted of demographic information, the General Health Questionnaire-12 (GHQ-12), and the Maslach Burnout Inventory (MBI) questionnaire. Descriptive statistics and pairwise correlations were performed to compare groups and responses. Results: A total of 95/112 (85%) residents completed all three sections of the questionnaire, with 64.2% (61/95) meeting the criteria for burnout. The average age of residents was 30 years, and 37% were female. Residents reported working an average of 67.6 hours a week. The GHQ-12 indicated that 29.5% of residents reported significant psychiatric morbidity. Conclusion: Burnout rates in Hispanic surgical residents were found to be higher compared to burnout rates in non-Hispanic physicians. Earlier stages of residency are associated with higher rates of burnout. In addition, increased work hours and sleep deprivation were associated with higher rates of burnout. However, no correlation was found between marital status, debt level, age, sex, and burnout rates. Psychiatric morbidity (GHQ-12 scale) was associated with higher burnout rates. Acknowledgements: The authors are grateful to the Department of Orthopaedic Surgery at the UPR-SoM for their support. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Patient Perception of Robotic-Assisted Total Joint Arthroplasty in a Hispanic Population

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Background: Robotic-assisted surgery in Orthopaedics is at the forefront of current arthroplasty topics. However, in spite of an increasing trend in the use of robotic-assisted surgery in total joint arthroplasty, its clinical benefits and patient perceptions regarding this technology remain

limited. Our aim was to explore patient perception regarding robotic-assisted orthopaedic surgery in a Hispanic population. Methods: Our research team was granted permission to reproduce and build upon a prior 30-question survey used to assess public perceptions of robotic-assisted orthopaedic surgery; particularly on total joint hip and knee arthroplasty. A 33-question survey was completed by 580 adult Hispanic patients visiting surgical and non–surgical clinics affiliated with the University of Puerto Rico School of Medicine. Once granted verbal consent, participants provided sociodemographic factors and answered questions regarding robotic-assisted orthopedic surgery, validated assessments of health literacy, and patient engagement. Multivariable logistic regression modeling was used to determine population characteristics associated with a preference for robotic technology. Results: 44.2% of participants were familiar with the use of robotic-assisted technology in orthopaedic surgery. 70.3% of participants accurately understood the role of the robot in the operating room. Initially, 53.1% had a clear preference for robotic-assisted surgery over a conventional approach. However, once provided evidence that results are similar between both methods, less than one-third of participants (25.5%) preferred robotic technology, while nearly half (51.6%) had no preference. 64.7% of participants preferred a high-volume surgeon with non-robotic traditional methods compared to a low-volume surgeon using robotic technology. Conclusion: This study demonstrated that the decision to adopt robotic-assisted surgery in total joint arthroplasty is multifactorial and may be influenced by various patient factors. Responses suggest more education is needed for better-informed decision-making by patients when deciding if they want robotic-assisted total joint arthroplasty. Acknowledgements: The authors are grateful to the Department of Orthopaedic Surgery at the UPR-SoM for their support. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

4305

Checking the box: identifying tobacco use mortality contribution on death certificates in Puerto Rico (2015-2019)

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Background: According to the Centers for Disease Control and Prevention, tobacco use cause more than 7 million deaths worldwide and more than 480,00 deaths in United States per year. Despite these facts, Puerto Rico did not have a standardized method for collecting information regarding of tobacco use associated deaths through death certificates until 2015. Objective: Before including the checkbox field to indicate whether tobacco use contributed to a death, establishing a possible relationship was not possible. For that reason, this research examines data from death certificates associated with tobacco use during the period of 2015 - 2019. Methods: Using a cross-sectional study methodology, the Puerto Rico Demographic Registry database for the period of 2015-2019 was analyzed. Results: During the period of 2015 -2019, after including the checkbox field, 4.0% of deaths were associated with tobacco use in the Island. For this same period, 5.4% of deaths in men, and 2.3% of deaths in women were associated with tobacco use. Other groups in which tobacco use was associated with the death were: people between 54-75 years (6.0%), divorced (5.7%), and people with High School (4.4%). The causes of death that were most associated with tobacco use were: Chronic lower respiratory disease (13.2%), heart disease (5.7%), and diabetes (5.1%). Conclusions: Without a doubt, the inclusion of the tobacco checkbox in the deaths certificates begins to give an overview of how the tobacco use are associate with the death rate in Puerto Rico. Likewise, new strategies are needed to educate healthcare providers on the importance of completing all fields on death certificates. Acknowledgements: Researchers would like to thank the Statistical Analysis Division of the Auxiliary Secretariat for Planning and Development of the Puerto Rico Department of Health and the Puerto Rico Demographic Registry for providing the access to the data.

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The Promotion of Safety and Quality in Fall Prevention

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Background: Falls in a hospital setting are considered one of the most frequent, preventable adverse events that need to be addressed through the creation of safer environments. Nurses play a key element in the prevention and management of injuries related to falls. The focus question for this quality improvement initiative (QII) was whether an evidence based QII program could reduce falls in the inpatient population. The objective was to improve the practices related to fall prevention to reduce the number of inpatient falls. Methods: The scenario identified to carry out the project was a local hospital in Mayagüez, Puerto Rico, specifically in the unit where the number of falls was higher during the previous months. The change model of Kotter and the Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care were used to implement the QII. The prevalence of falls from 1 month before the start of the project was compared to 1 month after the implementation of the falls program. The nurses were taught about the universal fall prevention measures and two evidence-based interventions were implemented (intentional hourly rounds and patients' education). Results: The interventions were implemented, and the findings of the prevalence 3 months later show a significant decrease in the number of falls with 0 cases reported in November and December. Compared to the previous analysis nurses recognized that meeting patients' toileting needs decreases the risk of falls versus the pre-implementation result. Conclusions: The findings reinforce that a change in staff awareness was achieved, and the decrease in the incidence of falls reinforces the effectiveness of intentional hourly rounds and patient education. The results of this project may influence nursing administrators and other leaders to increase the application of fall prevention policies.

4307

Análisis de los elementos de la Responsabilidad Social Corporativa con relación al Sector Salud y los hospitales privados en Puerto Rico

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Trasfondo y Objetivo General: La Responsabilidad Social Corporativa (RSC) se establece en: I) los principios y derechos fundamentales en el trabajo dentro de la materia fundamental de gobernanza; y, II) las condiciones de trabajo y la condición social, la salud, la seguridad, el desarrollo humano y la formación en el lugar de trabajo, dentro de la materia fundamental de prácticas laborales. Entre las organizaciones privadas que proveen servicios de salud en Puerto Rico, existe la necesidad por reconocer la importancia y llevar a cabo acciones de RSC. Por eso, el objetivo de esta investigación es analizar la información necesaria para el desarrollo del perfil de estas corporaciones en relación con la RSC en PR. Métodos: El propósito de este estudio se alcanzó a través de una metodología de investigación cualitativa de alcance descriptivo, mediante la aplicación de un diseño de estudio de caso. Los datos necesarios para lograr el análisis fueron recolectados por medio de las fases de investigación: I) revisión de literatura sistemática, II) análisis de contenido; y, III) mirada sistemática de estudios de benchmark y de evaluación de los contenidos en informes de RSC de los componentes del Sistema de Salud de EE. UU. El análisis consistió en la aplicación del

diseño de triangulación de los datos cualitativos recopilados. Se analizaron los hallazgos para generar categorías y segmentos cualitativos alineados a los objetivos operacionales de la investigación y se presentaron mediante un Diagrama de Árbol de Consecuencias para la formulación de Política Pública. Conclusiones: Los productos de este estudio permitieron la generación de una guía modelo para aportar a la comprensión de la importancia de que los contenidos en las declaraciones organizacionales y las acciones operacionales sean cónsonos con los valores de RSC de las organizaciones proveedoras de servicios de salud en PR. Agradecimientos: Ninguno.

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Extraño caso de adenocarcinoma de colon metastásico a cerebro: Estudio de caso en hombre de 77 años.

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Propósito: El adenocarcinoma de colon es la tercera causa de muerte por cáncer en los Estados Unidos. En Puerto Rico la tasa de mortalidad por cáncer de colon representa más del 13% de la población. Este tiende a presentar metástasis en diferentes lugares anatómicos como lo son: nódulos linfáticos, hígado, pulmón y cavidad peritoneal, sin embargo, es raro que este cáncer se presente como una sola masa en el cerebro. Este estudio de caso tuvo como objetivo analizar de manera citológica e histológica una masa en el cerebro y correlacionar esos hallazgos con los resultados de las pruebas auxiliares, edad y sexo del paciente. Descripción del caso: Este estudio de caso consiste en un hombre de 77 años con una masa en el cerebro al cual se le realiza una biopsia de aspiración por aguja fina y una biopsia de tejido. Los hallazgos citológicos e histológicos mostraron células con características malignas tales como: pérdida de polaridad, alta razón núcleo-citoplásmica, membranas nucleares irregulares, cromatina distribuida de manera irregular, hipercromasia, nucleolo prominente y citoplasma vacuolado. Las pruebas auxiliares destacadas mostraron resultados positivos para CDX-2 y CK20, confirmando la presencia de células malignas. Los hallazgos citológicos e histológicos junto con los resultados de las pruebas inmunohistoquímicas favorecen el diagnóstico de metástasis de adenocarcinoma de colon a cerebro. Conclusión: Este estudio de caso proveerá información novel de una metástasis de adenocarcinoma de colon a cerebro, como primera aparición de la malignidad. La mayoría de las veces los pacientes muestran síntomas consistentes con metástasis o ya tienen un diagnóstico de un tumor primario de colon, sin embargo, este caso no presenta lo mencionado anteriormente. Es por esa razón por lo que este caso será útil para la comunidad académica. Entre las limitaciones del caso envuelve el desconocimiento de la prognosis del paciente.

4310

Academia de Preparación en Salud Pública: Experiencia de capacitación laboral en el Departamento de Salud

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Entidad: Unidad de Gerencia Programática, Secretaría Auxiliar de Servicios de Salud Integrados- Departamento de Salud de Puerto Rico.

Trasfondo y Objetivos: La Academia de Preparación en Salud Pública fue creada por la Unidad de Gerencia Programática de la Secretaría Auxiliar de Servicios de Salud Integrados (SASSI) del Departamento de Salud (DS) en marzo 2021. Es una iniciativa de desarrollo profesional con el propósito de reforzar los conocimientos, motivación y habilidades del personal. Aunque el personal cuenta con conocimiento y experiencia dirigidos al logro de los objetivos programáticos, la Academia surge de la necesidad de fortalecer la capacitación en formato virtual durante

la pandemia de COVID-19. Esta iniciativa aporta al cumplimiento de los objetivos de Gente Saludable 2030, específicamente aumentar la proporción de agencias de salud que utilizan las competencias básicas en salud pública para educación continua. Además, se alinea al cumplimiento de los servicios esenciales de salud pública. Método: Durante el año 2021 se realizó un estudio de necesidades e intereses del personal mediante una encuesta electrónica y dos mesas de discusión virtuales. Como resultado se elaboró un plan de capacitación atemperado a las necesidades e intereses identificados. En este trabajo se presentan los resultados de la implementación de dicho plan. Resultados: Durante el 2022 se realizaron 9 actividades educativas virtuales con una duración de 2 horas. La invitación al personal se realizó a través de correo electrónico. El promedio de participación por sesión fue de 165 personas, incluyendo personal a nivel de las regiones del DS. Los temas discutidos incluyeron: Diversidad, Inclusión y Equidad, Ética, Manejo de Emergencias, Evaluación, Envejecimiento Saludable, Liderazgo, Hostigamiento laboral y Comunicación en Salud. Todas las actividades fueron evaluadas con más de 92% de satisfacción. Conclusión: Las actividades de capacitación contribuyen a fortalecer el desempeño y la motivación del personal, además de promover el cambio sistémico en las agencias. La acogida de esta iniciativa novel en el DS dio paso a su continuidad en el 2023. Agradecimientos: Esta iniciativa es subvencionada con los fondos del Preventive Health and Health Services Block Grant de los CDC. Agradecimiento especial a la Dra. Beatriz Quiñones-Vallejo por el apoyo en la etapa inicial de avalúo de necesidades e implementación de las actividades bajo la colaboración de la Association for State and Territory Health Officials (ASHTO).

4312

Plateau Pressure Values are Higher than Expected in Patients with BMI >25 kg/m2 During Low Tidal Volume Mechanical Ventilation

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Background and Objectives: The association between body mass index (BMI) and plateau pressure (Pplat) during low tidal volume mechanical ventilation (Vt; 6 ml/kg) has not been described, and there are no specific values attributed to obesity as a determinant of Pplat. In obesity, the Pplat may overestimate the distending pressure of the lung. Quantification of Pplat may clarify the role that obesity plays in the mechanically ventilated lung to avoid overdistension injury and atelectasis. We investigated the relationship between BMI and Pplat in mechanically ventilated patients undergoing elective surgery. Methods: In this cross-sectional study, we assessed 581 non-trauma patients aged >21, with ASA physical status I, II, and III undergoing general anesthesia under mechanical ventilation at PR Medical Center from 2017 to 2022. Patient height, weight, and sex were used to calculate real body weight (RBW) and ideal body weight (IBW) to estimate Vt. Five minutes after neuromuscular blockade, the ventilation parameters were assessed using standard ASA monitoring procedures. Results: A positive correlation was observed between the BMI and the Pplat values. When using RBW to calculate Vt, Pplat for patients with BMI>25 kg/m2 was significantly higher than that for patients with BMI <25 kg/m2 (18.7 ± 5.8 cmH2O vs. 13.0 ± 3.5 cmH2O, respectively, p<0.0001). When using IBW to calculate Vt, a similar pattern was observed. Moreover, in patients with BMI <25 kg/m2, no significant difference was observed in Pplat when using Vt calculated from RBW or IBW. In patients with BMI>25 kg/m2, however, Pplat was higher in the RBW group than in the IBW group (18.7 ± 5.8 cmH2O vs. 14.1 ± 3.8 cmH2O, respectively, p< 0.001). Conclusion: In conclusion, BMI has a positive correlation with the Pplat values under low Vt ventilation and could probably indicate that patients with decreased chest wall compliance are being sub-optimally ventilated. Acknowledgements: This research was supported by the Hispanic Alliance for Clinical and Translational Research (Alliance, NIH-NIGMS #U54GM133807), and the Anesthesiology Department of the University of Puerto Rico-School of Medicine.

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Consequences Associated with being Bullied among Adolescents in Puerto Rico

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Background: Bullying is a worldwide social phenomenon that occurs mainly in the school scenario during childhood and early adolescence. Although it has been recognized as a public health threat, research about the consequences bullying may lead to is limited in Puerto Rico. Objectives: The current study examined bullying in a sample of public and private school students in Puerto Rico to estimate its prevalence among adolescents. The frequency of the reasons the students were bullied was calculated. We analyzed the associations of bullying victimization with its potential consequences, such as substance use; violent and abusive behaviors; family conflict; early sexuality; academic performance; school absenteeism; perception of health and physical risk, and suicide ideation and attempt. Methods: The data for this study was extracted from "Consulta Juvenil", a survey administered every two years since 1990, funded by the Mental Health and Anti-Addiction Services Administration and conducted by researchers from the University of Puerto Rico and the Central Caribbean University. The sampling frame was the 2018-2019 cohort with a sample size of 5,523 that includes all middle and high schools in Puerto Rico, from both the public and the private sectors. Results: The prevalence of bullying over a lifetime was 39.7% (n = 2,009), while the prevalence of bullying reported in the last 12 months was 12.3% (n = 611). Moreover, differences between the sexes were identified regarding bullying victimization, being most prevalent among girls 13.8% (n = 361) than boys 11.1% (n =240). Among the most interesting findings, it should be highlighted that those students who reported being bullied were also bullies themselves, a term known as bully-victims 15.7% (n = 94) p<.001. Significant associations were obtained where the students that reported being victims of bullying were more likely to report the consequences explored by the study.

4314

Menstrual Cycle Disturbances after COVID-19 Vaccination in Patients with Inflammatory Bowel Disease in Puerto Rico

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Background & Objectives: Inflammatory bowel disease (IBD) is associated with menstrual irregularities and disease worsening during menses. Social media reports of menstrual changes rose after the COVID-19 vaccination, prompting scientific studies to understand this phenomenon. There is no current data on menstrual cycle changes after the COVID-19 vaccine in patients with IBD. Methods: An online survey was conducted from June 2022 to November 2022. Women with IBD were recruited via phone or during follow-up visits at the UPR-IBD Clinics. Healthy controls were recruited via a REDCap invitation link. Subjects aged 16 and older with menstrual cycles were included, and pregnant and postmenopausal women were excluded. Data collected included COVID-19 infection history, COVID-19 vaccine type, doses, and menstrual cycle characteristics. Descriptive statistics were performed using REDCap. This study is approved by UPR-MSC and PHSU IRB. Results: One hundred seven participants (IBD: 62, controls: 45) vaccinated against COVID-19 were recruited. The mean age for women with IBD was 34.4 ± 6.66, and for controls, 27.5 ±7.30. Most women with IBD (72.6%) had Crohn's disease. Healthy controls reported greater hormonal therapy or contraceptive usage than women with IBD (controls: 28.9%, IBD: 16.1%). Both groups had a comparable mean number of bleeding days (IBD: 5.71 ±3.22, controls: 5.18 ±1.28). In the IBD group, those reporting menstrual changes increased from 29.5%

after the first dose to 46.5% after the third dose, while in controls this difference was less evident (22.2% to 30.6%). Conclusion: Women with IBD had a higher prevalence of delayed menses after the 3rd vaccine than controls. Our data supports the importance of including menstrual and reproductive health in assessing side effects in vaccine clinical trials. More extensive and prospective studies are needed to understand the mechanisms involved in the impact of COVID vaccination on the menstrual cycle.

4315

Social Media in Psychiatry Residency Progams in Puerto Rico: an innovative tool to educate, motivate, and collaborate in Mental Health

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Background & Objectives: Over the past decades, social media (SM) has become a tool for interaction, networking, and professional communication. SM is any website or application that allows users to create or share content. During the COVID-19 pandemic, SM became essential to increase interactions between residents and the community. The University of Puerto Rico (UPR) Psychiatry Residency Program's Instagram (IG) and Facebook (FB) SM's goal was to educate, raise awareness, inform treatments, collaborate with providers, and share activities, and achievements. Was this goal reached? Which population did it reach? We hypothesized the goal was reached unevenly and that more women and men in Puerto Rico would access our platforms. Methodology: A cross-sectional study of the UPR Psychiatry Residency Program's SM accounts was conducted in January 2023. SM sites and activity were assessed. Posts were categorized as educational, collaborative, motivational, social, and recognition. We evaluated the follower's demographic characteristics. Results: @UprPsych IG had 188 posts as of January 2023. Of these, 54 were educational, 28 collaborative, 49 motivational, 37 social, and 35 were recognition. IG had 1,520 followers of which 58% were 25-34. 70.8% were women. 46.9% were from Puerto Rico, and 44.1% the United States. FB and IG accounts were linked. FB shared 97 additional educational posts. FB had 922 followers, of which 78.70% were women, and most were aged 25-44. 16.59% were from the United States. The Department's interview team stated all candidates mentioned SM during interviews. Patients have also found posts useful. Conclusions: @UprPsych SM appears to be an innovative tool for educating, collaborating, and sharing mental health information and services and a social outreach tool for future candidates to know more about the program. SM seems to be a viable medium to improve community outreach and chart the future of mental health. Acknowledgments: We would like to acknowledge every member of the Wellness Committee, Dr. Luz N. Colón, Dr. Shirin Shokooh, Dr. Camila Fernández-Lockwood, Dr. Saidy Salem, Dr. Frances Fuster, Dr. Liana Lladó-Medina for being indispensable members of the @UprPsych Social media platforms. References: Scott, K. R., Hsu, C. H., Johnson, N. J., Mamtani, M., Conlon, L. W., & DeRoos, F. J. (2014). Integration of social media in emergency medicine residency curriculum. Annals of emergency medicine, 64(4), 396-404.UPR Psychiatry (@uprpsych) • instagram photos and videos. UPR Psychiatry Medical & health University of Puerto Rico General Psychiatry Residency Program. (2020, February). Retrieved January 11, 2023, from https://www.instagram.com/uprpsych/. UPR Psychiatry (@uprpsych) • facebook photos and videos. UPR Psychiatry Medical & health University of Puerto Rico General Psychiatry Residency Program. (2020, February). Retrieved January 11, 2023, from https://www.facebook.com/UprPsych

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Experiencia Interprofesional entre estudiantes del Programa Doctor en Terapia Física y el Programa de Maestría en Terapia Ocupacional como parte del currículo educativo

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Trasfondo y Objetivos Las necesidades de salud de la sociedad requiere que los profesionales de la salud provean servicios interprofesionales de excelencia. Los programas académicos deben proveer educación interprofesional teórica y práctica para el desarrollo de las competencias interprofesionales. Facultad del programa Doctor en Terapia Física (DPT) y la Maestría en Terapia Ocupacional (MTO) diseñaron una actividad interprofesional para desarrollar la competencia de roles. Objetivos: 1) Exponer a los estudiantes a una experiencia interprofesional en el área de roles.2) Implementar el aprendizaje interprofesional en el desarrollo de destrezas en el área de agentes físicos. 3) Explorar el nivel conocimiento de los estudiantes sobre los roles profesionales. Método: Se utilizó el "National Interprofesional Competency Framework" para identificar las competencias que facilitan el trabajo interprofesional. Incluyó una presentación sobre los roles profesionales y un laboratorio practico en el cual los estudiantes del DPT educaron en el uso de los agentes físicos. Se administró una preprueba y posprueba al finalizar la actividad, una reprueba dos meses después y un instrumento para medir el nivel de satisfacción de los estudiantes. Resultados: Participaron 20 estudiantes del DPT y 14 de la MTO. El 100% de los estudiantes conocían los roles profesionales de las profesiones. A largo plazo se registró un aumento en contestaciones correctas sobre las categorías de agentes físicos; y un aumento en el número de contestaciones incorrectas en la aplicación de estos. El 100 % de los estudiantes que completaron la evaluación reportaron que sus conocimientos sobre el uso de los agentes físicos y los roles aumentaron; que contribuyó a su desarrollo profesional y que la actividad se realice con otros grupos. Conclusiones: Los estudiantes tenían conocimiento previo sobre los roles profesionales. Las actividades de educación interprofesional son valoradas por los estudiantes y contribuyen al desarrollo de competencias interprofesionales. Agradecimiento: Agradecemos a los estudiantes de los programas Doctor en Terapia Física y de la Maestría en Terapia Ocupacional por su colaboración en este proyecto.

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Extremely rare cause of abdominal mass in a 2 year-old female with anemia

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Purpose: A bezoar is an accumulation of foreign material in the gastrointestinal tract. The most common type found in humans is trichobezoar and if it extends into the small bowel it leads to Rapunzel Syndrome. This diagnosis is uncommon in children, since it is frequently found in teenage females, who have an underlying psychiatric disorder. Most trichobezoars cause abdominal pain accompanied by nausea and vomiting, but it may be asymptomatic for years. Here we present one of the youngest and possibly the first Latina girl with Rapunzel Syndrome. Case description: A 2 year and 5 month-old female with history of nutritional iron deficiency anemia was admitted due to severe and symptomatic anemia to receive a blood transfusion. However, the mother initially sought care due to abdominal pain, constipation, decreased oral intake, and associated history of hair pulling and eating behavior. Physical examination was notable for patchy alopecia, pale conjunctiva and a palpable, non tender, firm mass extending from the epigastric area to the umbilicus. Abdominal computed tomography scan with IV contrast revealed the stomach filled with mixed density debris most compatible with trichobezoar extending to the duodenum Additionally, within this structure, there are strand-like structures, which may represent additional ingested foreign bodies. Trichibezoar was removed surgically with an uncomplicated postoperative course. Conclusion: Trichobezoar diagnosis can go unnoticed in very young patients given its rarity in this age. It should be suspected in patients with a history of pica, usually secondary to iron deficiency anemia, manifested as trichotillomania and trichophagia. Our patient

had social stressors that may have contributed to trichophagia. Patients who present with abdominal pain and have an underlying psychiatric history, Rapunzel Syndrome should be included in the differential diagnosis. Acknowledgment: none

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El uso del sistema de estabilización modular Daisy para procedimientos dentales en pacientes dependientes de silla de ruedas de la Clínica de Medicina Dental del RCM

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En el 2018 en Puerto Rico, 35% de la población entre las edades 65 a 74 años reportaron una o más discapacidad. El uso de silla de ruedas en esta población es muy común para facilitar el transporte. El tamaño y extensión de esta, puede limitar el acceso a través de la Clínica de Medicina Dental. Así como también, aquellos pacientes que tienen debilidad muscular, la transferencia a una silla dental para recibir tratamiento puede ser compleja. Propósito: Este reporte de caso busca brindar una alternativa práctica y accesible para el manejo de pacientes en silla de ruedas en la Clínica de Medicina Dental del Recinto de Ciencias Médicas. Descripción del caso: A un paciente de 88 años con debilidad en sus extremidades inferiores se le realizó una extracción de una raíz retenida en su silla de ruedas. Se logró con el uso del sistema de estabilización modular Daisy para sillas de ruedas que se adapta a la misma y funciona dando estabilidad al área de cabeza/cuello y comodidad al paciente. Es un equipo portátil y de fácil manejo, lo cual facilita llevar a cabo el tratamiento y evita accidentes durante la transferencia de pacientes desde sus sillas hasta la silla dental. Conclusión: La divulgación del uso de este producto facilitará el acceso a tratamiento de aquellos pacientes que se ven limitados a ser atendidos por alguna discapacidad. Agradecimiento: Gracias al Dr. Juan Molina, quien es pionero en tratamiento para personas con discapacidad y líder en la medicina dental accesible.

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Assessment of the emotional and mental health of dental students at the University of Puerto Rico School of Dental Medicine during the COVID-19 pandemic

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Purpose: Mental health issues are the leading impediment to academic success. Mental illness can affect students' motivation, concentration, and social interactions—crucial factors to succeed in higher education. The COVID-19 pandemic has brought into focus the mental health of various populations. Aim: to assess UPR-SDM students' mental/emotional health status and the effects of COVID-19 on it. Methods: A cross-sectional study using a survey/questionnaire (PEIS English version: Pandemic Emotional Impact Scale) by Palsson/Ballou (2020) was sent by UPR Institutional email to undergraduate dental students from the UPRSDM (graduation year (2021 to 2024)) to assess the effects of COVID-19 on mental/emotional health of them. The survey was sent to the total population of 160 dental students of the UPRSDM during the first academic semester of 2021. The survey consisted of demographic questions and PEIS 16 mental/emotional health status questions. Dental students participating in this study were described in terms of their sociodemographic characteristics using frequency and proportions. Sociodemographic and mental health behavior data were compared by graduation class year and by rotation groups using Pearson's chi-square. Results: 67% of the respondents were female; the mean age was 26.18 years old (SD=3,40) 85% of the regular dental students answered the survey. Most of the students reported being a lot or extremely anxious, having difficulties concentrating, being less productive, and feeling frustrated, angry, or irritated. Statistically significant differences were found for the

year of graduation for being angry or irritated (p = 0.006), Classes of 2023-2024 report more frustration, anger, or irritation. Conclusions: The findings indicate that the emotional well-being of UPRSDM dental students has been substantially affected by COVID-19. UPRSDM first and second-year dental students were more affected. Acknowledgements: ADEA fellowship UPRSDM, Research reported in this publication was supported by the National Institute of General Medical Sciences of the National Institutes of Health under award number U54GM133807. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Management of temporomandibular disorders with orofacial myofunctional therapy: a systematic literature review

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Background & Objective: Myofunctional therapy (OMT) focuses on targeted exercises that promote a relaxed oral rest posture and allows modification of dysfunctional muscle patterns associated with temporomandibular disorders (TMDs). This systematic review aims to evaluate the evidence of OMT as a sole or adjunctive treatment for TMDs. Methods: A literature search was done to answer the research question: Is myofunctional therapy effective as sole or adjunctive treatment to manage TMD signs and symptoms? Two independent reviewers conducted an electronic literature search using PubMed, Embase, Google Scholar, and Lilacs databases up to December 2022. The inclusion criteria included articles published in the last twenty years in English or Spanish and randomized clinical trials (RCTs) that assessed the efficacy of OMT for TMD management. The exclusion criteria were systematic literature reviews, meta-analyses, observational studies, and expert opinions. The Revised Cochrane risk-of-bias tool (RoB 2) and the Grading Quality of Evidence and Strength of Recommendations (GRADE) framework were used to consider potential biases and limitations of the RCTs. Results: The electronic search yielded 427 results. Duplicates were removed, and studies that did not meet the inclusion criteria were excluded. Eight studies with 293 participants were identified. All studies (n= 8) found a reduction in TMD signs and symptoms from baseline with OMT alone or as an adjunctive treatment. The overall risk-of-bias judgment for most studies was "High risk of bias (n= 7)." The certainty of the evidence for the primary outcome (pain reduction) was "Very low." Conclusions: OMT alone or in combination with other treatment modalities (e.g., photobiomodulation, occlusal splint) may aid in the remission of TMD signs and symptoms; however, the certainty of evidence in the reported studies is "Very low." Acknowledgments: This research received no external funding. The authors declare that they have no conflicts of interest.

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Newborns Outcomes After Intrauterine Covid-19 Exposure In Puerto Rico

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Background and objective: Exposure to COVID-19 during pregnancy can cause sequelae or adverse effects during childbirth such as prematurity and low birth weight. In addition, little is known about the possible effects on the infant's development. It has been suggested that maternal infection occurring during critical periods of fetal development could alter brain structure and function. The objective of this research focuses on describing the health status of newborns exposed to COVID-19 in utero.

Methods: Retrospective medical records review of infants born to women who had COVID-19 infection during pregnancy, admitted to the UPR affiliated hospitals or referred for follow-up at the High-Risk Clinics. Epi Info used for statistical analysis. IRB approved. Results: Subjects included 207 newborns. Most mothers (61%) had active COVID-19 infection at delivery. The infants were mainly born vaginally (56%). Three mothers died from COVID-19. The infants were predominantly born at term (86%). The mean gestational age was 38 weeks (range 26-42) and the mean birth weight was 3016 grams (range 720-4485). The median 5- minute APGAR score was 9 (range 5-9). Most infants (84%) born to women with active COVID-19 infection were separated from their mothers for isolation after birth. The median infant's hospital stay was 3 days (range 1-31). Three infants died due to congenital anomalies. Conclusions: COVID-19 infection during pregnancy can have devastating consequences as evidenced by the 3 deaths that occurred in these mothers. Although prematurity has been associated with COVID-19 infection during pregnancy, the prevalence of preterm birth in this group of infants is similar to that in the general population in Puerto Rico. Even though these infants had a generally good outcome after birth, the developmental consequences of this exposure are unknown making it crucial to follow up their neurodevelopment during infancy and childhood.

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Post COVID-19, profesionalismo y el contrato social en la salud: la experiencia y necesidad de Puerto Rico

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Política Pública Analizada: La época actual post COVID-19 ha planteado un gran desafío no solo para los sistemas de salud a nivel global sino también para los profesionales en la salud, poniendo de manifiesto la necesidad de una nueva política de gobernanza del cuidado de la salud; esta nueva política implica un cambio radical en el contrato social entre los profesionales de la salud y la sociedad. Disciplina o Teoría: Según el modelo de contrato social presentado por Esquerda y Teres (2021) existe un "desajuste" entre el contrato implícito (lo que la sociedad y la gente espera) y el contrato explícito (las condiciones actuales contractuales, operacionales y laborales), y que ambos tipos de contratos pueden ser incongruentes. En este trabajo se teoriza que mientras más incongruentes sean estos dos tipos de contratos, mayormente debido a la privatización, menos óptimo será el funcionamiento del sistema se salud para avanzar el estatus de salud de la población, y más ineficiente el manejo de los fondos. Método: Se procedió a realizar un análisis comparativo conceptual de la experiencia de Puerto Rico con el pasado modelo de salud Arbona y el actual programa de salud del Gobierno llamado Plan Vital. Se consultó a un grupo de expertos a través de un modelo Delphi adaptado. Hallazgos: Hay que rehacer el contrato social actual entre los profesionales de salud y la sociedad puertorriqueña, implicando cambios mayores en la gobernabilidad del sistema de salud actual privatizado, debemos aprender de lo que hicimos bien en el pasado. Reconocimiento: Ninguno.

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Proyecto Ángel Azul: Desarrollo de la empatía en estudiantes universitarios de ciencias naturales por medio del emprendimiento social

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Trasfondo y Objetivos: El desarrollo de la empatía en estudiantes universitarios de ciencias naturales con aspiraciones a seguir una carrera en ciencias de la salud, es un reto, particularmente para los quieren estudiar medicina. El Proyecto Ángel Azul se desarrolla para atender esta necesidad en donde no solo logra la sensibilidad hacia los problemas sentidos de la comunidad tanto hospitalaria como civil, sino que logran el desarrollo de una microempresa social para atender esas necesidades en la comunidad.

Los objetivos del proyecto son: 1) Identificar necesidades reales y sentidas en el escenario hospitalario y en las comunidades. 2) Desarrollar el emprendimiento social como medio para atender la necesidad identificada en colaboración con la comunidad. 3) Desarrollar la empatía y responsabilidad comunitaria. Métodos: El modelo teórico utilizado fue aprendizaje-servicio solidario que integra la interacción comunitaria y la reflexión estratégica. En particular, se integra la capacitación teórica sobre aspectos del servicio comunitario solidario, la inmersión en un ambiente hospitalario, desarrollo de una microempresa social con una comunidad y la reflexión de las experiencias con ambas comunidades. Resultados: Reflexionar sobre las experiencias en el hospital permite entender la vulnerabilidad de los pacientes y familiares. Mientras desarrollan la microempresa social, los estudiantes se integran con la comunidad. En ese proceso comprenden las necesidades sentidas y se identifican de forma empática con la comunidad. Se han desarrollado decenas de empresas sociales para atender una diversidad de necesidades en la comunidad desde salud hasta ambientales. Conclusión: La aspiración del Proyecto Ángel Azul es que la empatía desarrollada en los estudiantes se mantenga a lo largo de su vida como profesionales de la salud y que se reafirmen en el lema del proyecto: El valor de servir no se aprende de lejos. Agradecimientos: Se agradece al Hospital Menonita de Cayey por proveer los espacios para la inmersión en el ambiente hospitalario y el apoyo de la Universidad de Puerto Rico en Cayey.

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A Precision Medicine Approach Toward Aneurysmal Subarachnoid Hemorrhage Patients: The Importance of Pharmacogenomics in Neurocritical Care

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Background & Objectives: There is only one FDA-approved drug, nimodipine (NMP), for the neuroprotection of aneurysmal subarachnoid hemorrhage (aSAH) patients. The standard oral/enteral dose of NMP recommended is 60mg/4hrs. However, more than 50% of the patients develop hypotension as an adverse drug effect (ADE) after taking NMP at the recommended dose. This could limit its neuroprotective role. Considering the frequency of NMP dose reductions in clinical practice, a precision medicine approach is undertaken to study how outcomes post-aSAH may be anticipated with pharmacogenomics (PGx) and dose-changes during hospital stay. Methods: After IRB approval, we retrospectively reviewed the electronic medical records of 150 patients admitted after aSAH. ADEs, dose-changes and cytochrome genotypes were recorded. We defined the genotype-phenotype patterns based on an existing Mayo Clinic classification and the neurological outcomes at discharge using the modified Rankin scale (mRS). Results: From the cohort of 150 patients, 57% had to be dose reduced from 60 mg to lower doses (30 mg or 15 mg) due to ADEs. We determined there were significantly poorer outcomes for 15 mg NMP doses at discharge when compared to 60 mg or 30 mg. For the genotype-phenotype patterns, most of the patients in our cohort were classified as average (66%), followed by intermediate (21%), extensive (9%) and poor (4%) metabolizers. A trend between metabolizer groupings and mRS could be established, where a high proportion of low mRS scores was reported for the extensive metabolizers and a low proportion of low mRS scores was reported for the poor metabolizers. Conclusion: This is the largest retrospective PGx analysis of aSAH patients to date. Patients who could tolerate 60mg NMP had better outcomes compared to those on lower doses. A trend was also identified among metabolizer groupings and outcomes. Further investigation is underway to determine if dose-increases can optimize neuroprotection. Acknowledgements: Authors report no conflict of interest. This project was funded by Mayo Clinic.

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Pintando Raíces: Concientización sobre el manejo de los desperdicios sólidos incorporando el arte y la tecnología.

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Trasfondo y Objetivos: En Puerto Rico la falta de medidas efectivas en el manejo de los desperdicios sólidos nos presenta un panorama poco alentador que se espera desemboque en una crisis ambiental. Muchos municipios no cuentan con los recursos necesarios para implementar programas que atiendan este problema. La avenida Haydée Rexach en la comunidad de Barrio Obrero en Santurce presenta un problema de manejo inadecuado de los desperdicios sólidos que promueve la contaminación ambiental y visual. Esta situación afecta a los residentes y comerciantes del área. Los objetivos del proyecto son: 1) Integrar las artes a través de la pintura para embellecer la comunidad. 2) Integrar la tecnología para divulgar el mensaje de su historia y cultura. 3) Concienciar a los residentes y comerciantes sobre la importancia de la colaboración en el manejo de los desperdicios sólidos. Metodología: Se pintaron 43 postes del alumbrado eléctrico de la avenida donde en colaboración con la comunidad se integró un diseño colorido, mensajes de bienvenida al barrio y siluetas que representan su cultura e identidad. Mediante un Código QR ubicado en los postes, la comunidad y los visitantes tendrán acceso a la información sobre su historia, cultura y otros enlaces de interés para la comunidad del G-8. El modelo teórico utilizado fue aprendizaje y servicio solidario que integra la interacción comunitaria y la reflexión estratégica. Resultados: La comunidad se ha involucrado en la fase de pintura y haciendo donativos monetarios para los materiales. Quieren incorporar esta iniciativa en comunidades aledañas para continuar promoviendo la concientización y colaboración comunitaria. Se han organizado para ampliar enlaces de colaboración con el municipio de San Juan para mitigar el problema. Conclusión: La tecnología utilizada permitirá que la comunidad actualice la información de acuerdo con sus necesidades sociales, económicas y ambientales a largo plazo. Agradecimientos: Esta es una de las iniciativas del Proyecto Ángel Azul.

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Prevalencia del síndrome de burnout en estudiantes de posgrado en educación

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Trasfondo y objetivos: El síndrome de burnout en los(as) estudiantes es una manifestación psicosocial inducida por los estudios. Además, es una respuesta prolongada a estresores emocionales e interpersonales que está definido por tres dimensiones: (a) agotamiento emocional, (b) cinismo, y (c) eficacia académica. Entre los principales factores del desarrollo del síndrome en los(as) estudiantes se encuentran: sobrecarga académica, relaciones interpersonales con los(as) compañeros(as) y profesores(as), variables sociodemográficas, entre otros. El objetivo de esta investigación fue determinar si los(as) estudiantes de posgrado de una institución universitaria en Puerto Rico experimentaban el síndrome de burnout. Método: La investigación fue de naturaleza cuantitativa, se utilizó el diseño comparativo-descriptivo y participaron 251 estudiantes graduados(as) de una institución universitaria. En la técnica para la recopilación de datos se utilizó un cuestionario titulado Maslach Burnout Inventory Student Survey. Las pruebas no paramétricas Mann-Whitney U y Kruskal Wallis que se utilizaron para analizar los datos confirmaron diferencias entre los grupos

de participantes que se compararon. Resultados: Mediante los resultados se encontró que las mujeres en comparación con los hombres presentaron niveles altos de agotamiento emocional y cinismo y niveles bajos de eficacia académica. Además, se encontró que los(as) estudiantes que trabajan y tienen hijos(as) presentaron mayores niveles de agotamiento emocional y cinismo. Conclusión: En este sentido, las presiones en el trabajo y las demandas familiares y académicas representan factores que inciden en el desarrollo del síndrome de burnout. Por tanto, se recomienda diseñar programas de prevención e intervención para identificar los factores que predisponen el origen de este síndrome. Es imprescindible que los(as) estudiantes procuren su autocuidado emocional y físico para la prevención del síndrome de burnout. Agradecimientos: Mis agradecimientos al Dr. Bonilla, Dra. Álvarez, Dra. Rodríguez y Johani Ortiz por su apoyo en este proyecto investigativo. Declaro que no existe ningún conflicto de intereses (económico, profesional o personal).

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The Role of Familiarity and Rank in Sociability

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Sociability, the tendency to interact within conspecifics, is vital for the survival of social species. Dominance hierarchies are natural social structures in which individuals have different social ranks, and these are thought to mediate how sociability plays a role on interaction. Many studies have evaluated social interactions, however, the effects of factors such as social rank and familiarity in sociability are not commonly studied. To fill in this gap we tested how rank and familiarity may affect sociability evaluating mice as they form flexible linear hierarchies in a laboratory setting. Mice from the same home cage were socially ranked using the tube test. Mice with dominant or subordinate ranks were used as social agents for intermediate ranked mice. We used the three-chamber apparatus to measure sociability and social recognition in mice. Social rank and familiarity for the social agent were varied in the sociability assay, as well as the social rank for the agent in the recognition assay. It was hypothesized that the mice would spend more time with the novel social agent instead of the familiar social agent. Interestingly, in both assays there was no difference in time spent with the social agents of different ranks and familiarity. Moreover, in the social recognition test there was no significant difference between time spent with the familiar and novel agent. Taken together, these findings suggest that familiarity and rank do not affect sociability or social recognition as measured by these paradigms.

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Hysterectomy-induced Vesicovaginal Fistula Repair Using Platelet Rich Plasma: A Case Report and Narrative Review

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A vesicovaginal fistula (VVF) occurs when a connection develops between the bladder and the vagina, and the gold standard treatment is surgical closure. Published data have demonstrated that most of the cases of VVF in developed countries had a surgical etiology, most commonly a hysterectomy. The most common symptom associated with VVF is continuous leakage of urine through the vagina. Here we present the case of a 49-year-old female from Puerto Rico with a 1-year history of involuntary urinary leakage. She was evaluated due to recurrent VVF status post two surgical repairs in the last year after abdominal hysterectomy. After cystoscopy and identification of a 5 mm vesicovaginal fistula in the posterior bladder, platelet rich plasma was injected without the need of surgical intervention with excellent results. To the best of our knowledge, this is the first documented case of hysterectomy induced VVF repair using only platelet rich plasma in a Puerto Rican patient.

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Knockout of renal Glut2 gene activates the hypothalamic-pituitary-adrenal axis to increase glucose production in mice

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Background & Objectives: We recently reported the contribution of renal GLUT2 (glucose transporter 2) to systemic glucose homeostasis using a mouse model in which we can knockout renal Glut2 gene at a desired time. Renal Glut2 knockout mice have improved glucose tolerance and are protected from high-fat diet or streptozocin induced diabetes because they excrete excess blood glucose in urine. Interestingly, despite the profound loss of glucose in urine, renal Glut2 knockout mice have normal fasting blood glucose levels (the mice don't display hypoglycemia). These findings indicate that an increase in endogenous glucose production may be compensating for the loss of glucose in urine. To determine the mechanisms responsible for evoking the increase in endogenous glucose production, we focused on studying the hypothalamic-pituitary-adrenal (HPA) axis because of its established role in elevating blood glucose levels. Methods: We used ELISA to measure circulating adrenocorticotrophic hormone (ACTH) and corticosterone, which are major hormones of the HPA axis. Moreover, we used fluorescence in situ hybridization to assess the expression of hypothalamic corticotropin releasing hormone gene (Crh). We also performed metabolomics analysis of the mouse liver using mass spectrometry. Results: Renal Glut2 knockout mice had increased levels of hypothalamic Crh (100 ±13 vs 142 ±9 %, control vs experimental), circulating ACTH (120 ±8 vs 213 ±12 pg/ml), and corticosterone (30.4 ±5.5 vs 115 ±15.2 ng/ml). In addition, we found that metabolites such as hepatic glucose-6-phosphate (19.2 ±1.5 vs 15 ±1 arbitrary unit, control vs experimental), glucose-1-phosphate (20 ±1.5 vs 15.5 ±1), and fructose-6-phosphate (16 ±1.2 vs 12.4 ±0.8) were decreased in renal Glut2 knockout mice. Conclusions: Our results demonstrate that loss of renal Glut2 causes hyperactivation of the HPA axis coupled with decrease in hepatic glucose metabolism and/or increase in glucose production. These findings may explain how the renal Glut2 knockout mice prevent hypoglycemia despite massive glycosuria. Altogether, our study identifies a novel crosstalk between the kidneys, hypothalamus, and adrenal glands to regulate systemic glucose homeostasis. This information may be useful in either optimizing the efficacy of drugs that enhance glycosuria to treat diabetes or addressing the side effects of such drugs on the HPA axis. Acknowledgements: This research was funded by the NIH grant DK124619.

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Germinando Soles: El sentido de responsabilidad y compañerismo como parte del proceso de adaptación social en adolescentes maltratados

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Trasfondo y Objetivos: La tasa de maltrato de menores en Puerto Rico, de acuerdo con la Administración de Familias y Niños, se estima en 10 menores maltratados por cada 1,000 menores de 18 años. Como consecuencia, se afectan sus necesidades fisiológicas, rendimiento personal y desarrollo cognitivo. En muchos casos, estos menores son retirados de sus hogares y recibidos en instituciones

que se dedican a atender esta población. Su estancia es limitada y de constantes cambios por lo que muchos de ellos no reciben las herramientas necesarias de formación y desarrollo personal una vez pasan a la vida de la adultez. A través del desarrollo de un huerto, Germinando Soles ofrece la oportunidad a adolescentes varones del Hogar San Miguel de germinar la semilla dentro de ellos que tiene todo lo necesario para florecer. Los objetivos del proyecto son: 1) Promover la responsabilidad y el compañerismo. 2) Establecer estructura y actividades en el exterior. 3) Aprender sobre el valor y el cuidado de la tierra. Métodos: Nos relacionamos con los jóvenes a través de actividades de confraternización. Se les capacitó en el diseño del huerto desde la selección de los frutos hasta su siembra. El modelo teórico utilizado fue aprendizaje y servicio solidario que integra la interacción comunitaria y la reflexión estratégica. Resultados: Los jóvenes han tenido la iniciativa de atender y cuidar el huerto distribuyendo sus responsabilidades. Comprendieron los beneficios de conocer estas destrezas para en un futuro trabajar en la agricultura como medio de sustento y terapia. Conclusión: En la continuación del cuidado del huerto se espera que ellos sustituyan las experiencias de maltrato con el sentimiento de amor hacia algo vivo que aspira a crecer y dar frutos. Que transfieran esa semilla que germinó en ellos integrándolo a su filosofía de vida. Agradecimientos: Esta es una de las iniciativas del Proyecto Ángel Azul.

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Clinical Features, Sociodemographic Characteristics, and Risk Behaviors of Patients from a Metropolitan Community Health Center with a Positive SARS-Co V-2 Test, Puerto Rico, 2020-2022

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On July 2020, HealthproMed, a private non-profit community health center that serves people without medical insurance or with limited resources in Santurce implemented a COVID-19 case investigation and contact-tracing surveillance system. Nursing personnel completed a computerized case investigation form that was translated, adapted, and modified from CDC's Patient Under Investigation Form. Between July 13, 2020 and September 28, 2022, a total of 11,719 SARS-CoV-2 tests were conducted at HealthproMed, 18.8% of which were classified as confirmed cases (positive molecular or antigen test). Most of the cases were females (61.6%), under age 20 (28.1%), and lived in a one family dwelling (58.6%). Two-thirds had at least one dose of a COVID-19 vaccine (67.6%), mostly Pfizer or Moderna. In the 14 days before symptom, 31.5% of cases reported going to the supermarket, 22.5% went to work, 20.4% went to a mall or shopping center, and 19.5% had contact with a COVID-19 case. The symptoms most commonly reported were runny nose (46.2%), cough (45.6%), and sore throat (44.5%). The most common preexisting medical conditions among cases were hypertension (18.4%), diabetes (11.3%), and chronic respiratory disease, including asthma, emphysema, and COPD (10.4%). When exploring risky behaviors reported by cases, only 15.6% used <4% reported alcohol or drug use. Implementing a case investigation and contact-tracing component at community health centers can be of great value in the prevention and control of COVID-19 at the community level, and could be used in future outbreaks.

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Proyecto TecnoBoomers: Iniciativa de alfabetización digital de adultos mayores

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Trasfondo y Objetivos: Los avances tecnológicos han puesto al descubierto la brecha digital que existe en contra de los adultos mayores. Con el pasar del tiempo los procesos cotidianos y comunes para esta población han migrado a plataformas digitalizadas

sin ofrecer opciones alternas para quienes no manejan equipos electrónicos. A muchos se les dificulta acceder efectivamente los servicios esenciales a los que tienen derecho, haciéndolos dependientes, minando su individualidad y criterio propio en la toma de decisiones. La misión de TecnoBoomers es ser facilitadores del conocimiento tecnológico a los adultos mayores para mejorar su calidad de vida. Los objetivos del proyecto son: 1) Exponer a los adultos mayores a la tecnología. 2) Desarrollar el sentido de autonomía en los adultos mayores. 3) Integrarlos a la comunidad de la Universidad de Puerto Rico en Cayey. Métodos: Durante los conversatorios con los participantes del Centro de Servicios Múltiples El Campito conocimos su exposición y uso de la tecnología. Basado en esto, desarrollamos un taller sobre el uso y manejo del correo electrónico y seguridad cibernética, en el cual se ofreció asistencia individualizada para cada participante. Se utilizó el modelo teórico de aprendizaje y servicio solidario que integra la interacción comunitaria y la reflexión estratégica. Resultados: Los participantes se sintieron como estudiantes universitarios donde reconocieron el valor de aprender sobre la tecnología para manejar de forma más eficiente las gestiones y servicios que reciben. El taller los ayudó a continuar desarrollando sus destrezas motoras, cognitivas y de socialización y provocó un junte generacional y creación de lazos de comunión entre los estudiantes y adultos mayores con solidaridad y empatía. Conclusión: Es nuestro deseo ampliar el alcance del proyecto a pueblos dentro del área de servicio de la Universidad de Puerto Rico en Cayey. Agradecimientos: Se agradece al Centro de Servicios Múltiples El Campito en Aibonito por el acceso a la población y el apoyo de la Universidad de Puerto Rico en Cayey. Esta es una iniciativa del Proyecto Ángel Azul.

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Purtscher-like retinopathy as a rare presentation of systemic lupus erythematosus

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Purpose: Systemic lupus erythematosus (SLE) is an autoimmune, multisystemic disease that may affect the eye in up to a third of patients. Purtscher-like retinopathy (PLR) has been reported as a rare and severe ophthalmic manifestation in SLE patients. We present a 23-year-old man with SLE who presented with PLR. Case Presentation: A 26-year-old man with recently diagnosed SLE presented with headaches blurred vision, photophobia, and pain in his left eye. Ophthalmic examination showed the presence of macular edema with flame hemorrhages and cotton wool spots surrounding the macula, vascular sheathing, and retina attached. The right eye examination was unremarkable. Laboratory investigations showed normocytic normochromic anemia (hemoglobin level of 11.4 Thou/uL), normal white blood cell and platelet counts, mild lymphopenia (0.99 Thou/uL), elevated C-reactive protein (14.2 mg/L), and ESR (61 mm/Hr). Renal function tests and urine analysis were normal. Lupus panel showed a positive anti-nuclear antibody (ANA)test, 1:2560 AI speckled pattern, and the presence of Anti-Smith antibodies (> 480). C3 and C4 complement levels were normal and anti-dsDNA antibodies were not elevated. Brain and orbit MRI were unremarkable. PLR was diagnosed following the ocular findings and the recent diagnosis of SLE. Treatment with high-dose steroids and systemic immunosuppression with mycophenolate mofetil was started. Conclusion: Ocular disorders are common in patients with SLE, and PLR is one of the unusual severe manifestations. Therefore, SLE patients should have a baseline ophthalmological evaluation to recognize possible diseases and prompt treatment to preserve ocular function. Although there are no specific guidelines on the treatment of Purtscher-like retinopathy, the approach focuses to manage the underlying disease. Acknowledgment: None

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Perceptions of Government Response to the COVID-19 Pandemic and Mental Health Problems: Is There a Relationship?

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Background/Objectives: Worldwide management of the pandemic has focused on reducing infections, treating positive cases, and offering economic relief while overlooking mental health. We examined if adults from Puerto Rico (PR) who experienced significant psychiatric symptoms/psychological distress during the pandemic attributed a worse quality to government anti-pandemic response than those without substantial symptoms/distress. Methods: Participants were 1706 adults (79.89% women) aged 21–79 years who completed an online survey (June 10, 2020–June 9, 2021; IRB approval #1920-194). They must be PR residents for ≥3 months before enrollment, have access to the Internet, and understand Spanish. The survey included a socio-demographic questionnaire, the Government Response to COVID-19 Assessment Scale (GReCAS), the Patient Health Questionnaire-4, the Primary Care PTSD for DSM-5, the 6-item De Jong Gierveld Loneliness Scale, the Fear of Coronavirus Infection-Questionnaire, and a question on Death/Self-Harm Thoughts (DSHT) anytime during the pandemic. The GReCAS subscales were COVID Testing/Monitoring and Management Measures/Planning. With separate ANOVAs, we compared mean GReCAS scores between groups defined by the presence/absence of DSHT or at least moderate levels of depression, anxiety, posttraumatic stress, loneliness, or fear of infection. Using logistic regressions, we examined if DSHT or clinical levels of mental health problems related to higher odds for negative assessments of government response (GReCAS <42). Results: Participants with DSHT or clinical levels of any psychiatric symptoms/psychological distress category reported lower scores ($p \leq .05$) than their counterparts. After adjusting for sociodemographics, DSHT and clinical levels of depression, posttraumatic stress, and loneliness related with significantly higher odds (1.27–1.75) of reporting negative assessments. The highest odds ratios were observed among adults with DSHT + depression (1.84) and respondents meeting the criteria for all problem categories (2.01). Conclusion: Including coordinated mental health preventive/treatment measures in pandemic management plans might improve adult mental health and perceptions of the quality of government performance. Acknowledgements: Personal funds from the second author were used to conduct this research. The authors have no conflict of interest to disclose.

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A Preliminary Data Analysis: Psychological Symptoms in a Sample of Hispanic youth exposed to adverse events

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Background & Objectives: According to the World Health Organization (2022), it's estimated that approximately 8% of adolescents between the ages of 10 and 19 suffer from Anxiety Disorder and 4% suffer from Depression Disorder. Adverse events such as natural phenomena, environmental stressors, violence, family conflicts, and poverty, can increase the risk for depression and anxiety making adolescents vulnerable to mental health conditions. Hence, our objectives are to (a) explore the differences between mood-related symptoms and assign birth sex, and (b) the relationship between the number of adverse events and mood-related symptomatology in a Hispanic youth. We hope to contribute to the mental health literature in Puerto Rican youth by answering these objectives. Method: Secondary data analysis was performed using a sample from the study "Exploring the relationship between Traumatic Exposure to Neurocognitive Process and Academic Achievement in a sample of Puerto Rican Youth". The sample consisted of 18 participants between ages 12 and 17 that reported having been exposed to one or more adverse events. The recruitment was carried out in clinics and schools from different regions of Puerto Rico. The sample was selected by convenience. The measures in the study were Child and Adolescents Trauma Screen (CATS), Patient Health Questionnaire (PHQ-9) and General Anxiety

Disorder-7 (GAD-7). Results: An independent t-test was conducted to examine the difference between sexes on anxiety symptomatology, and depressive symptoms, which showed no statistically significant differences. Regression showed that the total of adverse events could explain 49% of variability of anxiety symptoms and was significant (P<.01). Only 10% of the variability of depression symptoms could be explained by the number of adverse events, which showed no significance (p<.06). Conclusion: Our preliminary data suggest that some variability of anxiety symptoms can be explained by the total adverse events experienced. Acknowledgements: This research was approved by IRB and the effort was aided by the data base of Dr. Mary Moreno, Ph.D, the research conducted by Rosanna Rodriguez, M.S., data analysis support of Dr. Mario Bermonti, Ph.D, and the continuous work of the research assistants at the Ponce Health Sciences University in Puerto Rico.

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ADEA Academic Dental Careers Fellowship Program: Education about Infant Dentistry at the UPR School of Dentistry of the Medical Sciences Campus

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Background and Objectives: ADEA Fellowship Program allows students to become involved in academic careers by being mentored and structured along the way. This program allows focusing on different academic themes in which the student wishes to elaborate on the subject, which in this project is infant dentistry. Infant dentistry is provided at the age of 0-3 years old. In this educational project, the focus is on dental treatment and preventive management. The objectives of this education project are: to obtain more knowledge about infant dentistry, to understand the concepts of behavior management , frenectomies, operating room, and the preventive guidelines that need to be considered for the baby to have an optimal oral health as primary care givers in the future. Methods: For this project, a lecture about infant dentistry was given to 20 undergraduate dental students interested in Pediatric Dentistry specialty. The students were brought together for a lunch-and-learn educational experience. Oral questions were asked throughout the lecture, and students responded verbally. At the end of the presentation, the students participated in a dynamic where they practiced the knee-to-knee exercise with equipment currently used in the pediatric dental clinic. Results: It was observed that the lecture was satisfactory. Based on the questions asked during the lecture, the students were able to answer them with certainty because they were attentive. The dynamic at the end helped them understand the concepts explained during the lecture and how they can put them into practice when they have an infant patient at the school clinic. Conclusion: The ADEA Fellowship program allows us to have an experience in the academic area. It helps dental student expand their knowledge. This program help students participate in the academia and helps the community and participants understand, study, and apply concepts within different dental scenarios. Acknowledgment: This is a non-funded program. We appreciate the effort of the UPRSDM staff, faculty mentors, and Liaisons to fulfill our goals. Also, we acknowledge the collaboration of the UPRSDM Postdoctoral Program with the Pediatric Dentistry Director, residents, and staff who provided access, guidance, and insight to our dental students.

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Admission criteria and its relationship with student success in the Doctor of Physical Therapy Program of the University of Puerto Rico-MSC

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Background and objectives: Students' success in the Doctor of Physical Therapy Program (DPT) at the University of Puerto Rico is determined by the student ability to maintain the required grade point average (GPA), pass patient standardized exams

(SPE), and obtain a passing score in the Practice Exam Assessment Tool (PEAT). The PEAT is correlated with a passing score in National Physical Therapy Examination, which is the final expected outcome after graduation. Identifying predictors of success in the Program is imperative. This study evaluated the predictive relationship between admission criteria and performance at the DPT program. The main hypothesis established that the admission exam scores (EXADEP) and the specific GPA are strong predictors of successful performance in the Program. Methods: A retrospective correlational analysis was conducted using data from 72 student records from the cohorts admitted from 2014 to 2017. Data collected were students' demographics, general GPA, specific GPA, admission interview score, EXADEP, GPA of the first academic year (GPAY1), scores from SPE (SP1, SP2 and SP3), and from the PEAT. Intellectus Statistics program and SPPS were used for data analysis. Approved by the IRB. Results: There were not significant correlations between EXADEP scores and the specific GPA with the GPA1Y, SPE, and PEAT. Significant correlations were only found between the GPA1Y and PEAT ($r = 0.49$, $p < .001$, 95% CI = [0.29, 0.65]. A regression analysis indicated that the GPA1Y significantly predicted the performance in SP3 ($B=15.48$, $t(35) = 2.79$, $p = .008$) and in PEAT ($B=123.77$, $t(70) = 4.18$, $p < .001$). Conclusion: The principal predictor of student success in the DPT program was the GPA1Y, which significantly correlated with the PEAT and the SP3 (final summative experience). It is recommended that a close follow up be provided to students with low GPA1Y. Acknowledgments: Ana L. Mulero PT, PhD (consultant); Elvis Santiago Rodriguez (statistician); Ana Font Rivera, PT, PhD (lector); and Jesiel A. Rosa Morales (research assistant). This study was not funded. IRB Protocol Number: B3330120

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Perception of Dental Sleep Medicine Among Dental Practitioners

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Background & Objectives: Dental Sleep Medicine (DSM) can be defined as a discipline within dentistry that focuses on oral and maxillofacial causes and consequences of sleep-related problems. It involves the use of oral appliance therapy (OAT) to manage sleep-disordered breathing (SDB). Sleep-related problems include bruxism and xerostomia. One of the most prevalent SDBs is Obstructive Sleep Apnea (OSA). When it comes to SDBs treatment and diagnosis a gap exists regarding signs and symptoms recognition. Here we aimed to gauge the interest and practices of dental practitioners in DSM and identify knowledge gaps that may improve patient outcome. Methods: A "Quick Poll" on DSM was conducted by the National Dental PBRN Network (Network) in February 2021. It was sent to Network members in a single invitation to be completed, without follow-ups in the Network's newsletter. The Quick Poll consisted of a five-question questionnaire focusing on DSM. It was received by 5,104 Network members, from which 311 responded. Results: Of our respondents, two-thirds have some type of involvement in DSM, and 2 are solely dedicated to DSM. Interestingly 4% receive patients from primary care physicians for DSM and 6% from sleep physicians. About half of practitioner respondents do not screen for SDBs. Among responders' interest emerged in taking continuing education on DSM topics. Responders to OATs, compliance with OATs and various practice models on DSM were the top topics of interest from the respondents. Concerning issues, the top identified were insurance/medical billing, lack of patient's knowledge on DSM, and side effects of OATs. Conclusion: Dental practitioners are facing challenges in recognition, management, and treatment of DSM. There is a need for establishing standards regarding

DSM OAT treatment, titration protocols and patient outcomes. Education and research will pave the way to close gaps regarding DSM. Acknowledgements: This work was supported by NIH grant U19-DE-28717. Opinions and assertions contained herein are those of the authors and are not to be construed as necessarily representing the views of the respective organizations or the National Institutes of Health. An Internet site devoted to details about the nation's network is located at http://NationalDentalPBRN.org. The authors gratefully acknowledge all the network practitioners who responded to this Quick Poll.

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Evaluating defective Transcription-Coupled Nucleotide Excision Repair as a mechanism for sensorineural hearing loss in a zebrafish model of Cockayne Syndrome

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Background and Objectives: Cockayne Syndrome, a disorder caused by autosomal recessive pathogenic variants in ERCC6, presents clinically with premature aging, short stature, neurodegeneration, and sensorineural hearing loss (SNHL). The objective of this research is to characterize a zebrafish model for human Cockayne Syndrome to determine the role of Transcription-Coupled Nucleotide Excision Repair (TC-NER) defects in sensorineural hearing loss. Methods: We developed a zebrafish line with a homozygous 9+1 base-pair deletion in exon 7 of the ercc6 gene using Transcription Activator-like effector nucleases (TALENs). Affected fish were confirmed by Sanger sequencing and genotyped by PCR using restriction digest with StuI. We performed a series of assays to evaluate zebrafish growth, inner ear hair cell morphology, structure, and function, as well as hair cell ribbon synapse structure, to identify potential differences between the ercc6 mutant zebrafish line and their wildtype siblings. Additionally, electron microscopy will be used to assess differences in hair cell ultrastructure between ercc6 mutant zebrafish line and their wildtype siblings. Finally, development of UVC exposure assays are underway to determine the role of TC-NER on this novel zebrafish model and evaluate its potential implications in sensorineural hearing loss. Results: Mutant ERCC6 zebrafish appear healthy and live to adulthood. At 5 days post fertilization, embryos measure smaller than their wildtype siblings. We found no significant difference in lateral line hair cell fluorescence imaging after FM1-43 vital dye staining between ERCC6 mutants and their WT counterparts, supporting that mechanotransduction is intact in mutant zebrafish. Conclusions: Preliminary results suggest that our ERCC6 zebrafish mutants are viable. We continue to test additional hypotheses regarding the mechanism of hearing loss in Cockayne Syndrome and to determine if TC-NER has a role role in SNHL. Acknowledgments: This research was supported by UL1 Grant TR002377 from the National Center for Advancing Translational Sciences.

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Adaptación Cultural del Cuestionario Escala de Violencia y Agresión de los Pacientes, Violence Aggression Patient Scale (VAPS) por sus siglas en inglés

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Trasfondo y objetivos: Se ha evidenciado reiteradamente que el profesional de enfermería compone uno de los grupos de trabajadores de la salud que más se exponen a incidentes de violencia en el ámbito laboral, por parte de los pacientes. Sin embargo, se carece de un instrumento que pueda medir este problema, en el idioma español y más aún que haya sido adaptado a la cultura puertorriqueña. Se identificó el cuestionario Violence Agression of Patient Scale (VAPS), cuyo idioma original era el inglés; por lo que fue necesario su traducción y

validación cultural. El estudio busca determinar la calidad de la traducción, claridad, comprensión y relevancia a la cultura puertorriqueña del VAPS, y determinar la validez y confiabilidad del cuestionario en una muestra piloto. Método: Diseño descriptivo. Luego de traducido se administró a una muestra de 30 participantes profesionales de enfermería que laboraban en una de las siguientes áreas: sala de emergencias, sala de salud mental y psiquiatría, sala de medicina, sala de recuperación o unidad de cuidados intensivos. Resultados: Los resultados mostraron que para las categorías evaluadas; (1) claridad, (2) calidad de la redacción, (3) comprensión y (4) pertinencia para la cultura de Puerto Rico; los 11 ítems obtuvieron un 50% o más, calificándolos como bueno. Por lo que no se realizaron cambios en el contenido. Por otro lado, obtuvo un alpha Cronbach de .88 o más, en las cuatro categorías de escalas de violencia, lo que significa un nivel de confiabilidad alto. Conclusión: Podemos concluir que el cuestionario VAPS es una herramienta útil que permitirá cuantificar el problema de la violencia dirigida al profesional de enfermería por parte del paciente. Agradecimientos: se declara que no hubo fuente de financiación ni conflicto de interés con ninguna entidad o persona.

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Medical Treatment Satisfaction and Associated Clinical History in Patients with Inflammatory Bowel Diseases

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Background: Inflammatory bowel diseases (IBD) affect how patients perceive their condition, and may impact medical treatment perception. In this study, we analyze patients' medical treatment satisfaction, and associated clinical history. Methods: Patients with IBD attending a tertiary care clinic completed an anonymous questionnaire in an interview format. We assessed patients' medical treatment satisfaction using a 5-point Likert scale. Satisfaction was defined as the extent to which medical treatment aspects (i.e., pharmacotherapy, surgical interventions) met their healthcare expectations. Bivariate analyses were executed. This study is approved by the MSC-IRB. Results: 133 participants were recruited (99CD/34UC, 69F/64M, mean age: 30.7±11.1). When evaluating patients' medical treatment satisfaction, 67.7% indicated they were satisfied to very satisfied, 21.8% were neutral, and 10.5% were unsatisfied to very unsatisfied. Medical treatment satisfaction was not different between subjects with CD or UC (p=0.392). 50.4% of patients had surgical interventions to treat IBD. There was no difference between presence of surgical intervention and medical treatment satisfaction (p=0.836). 67.7% of patients had received mesalamine/sulfasalazine, 63.9% a corticosteroid, 39.1% an immunomodulator, 82.7% an anti-TNF-α, 9.0% an integrin receptor antagonist, and 10.5% an interleukin antagonist. Patients using an anti-TNF-α were significantly more likely to be unsatisfied to very unsatisfied or neutral about medical treatment compared to those who had not used this drug ($p<0.05$). Medical treatment satisfaction was not significantly different in patients who received mesalamine/sulfasalazine (p=0.700), a corticosteroid (p=0.784), an immunomodulator (p=0.936), an integrin receptor antagonist (p=0.460), and an interleukin antagonist (p=0.275). Conclusions: Data showed that IBD diagnosis and surgical status had no impact in medical treatment satisfaction. The use of anti-TNF-α demonstrated a potential influence. Possible explanations include the small number of subjects in other groups, adverse effects of this medication, or a difference in severity of the IBD. Further studies related to satisfaction with medical treatment are warranted.

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Sports Specialization and Tennis Shoulder Injury: Treatment and Prevention

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Background & Objectives: Sports specialization has become a common practice to achieve higher levels in competitive sports. It is defined as an athlete focusing in one sport, quitting all other sports, and training in that sport for more than 8 months per year. The most widely reported consequence of early sports specialization are: an increase in incidence of overuse injury, psychologic stress, and burnout. The goal of the study is to review recently published literature focused on sports specialization and the prevention of overuse injury. We believe that implementing a prevention program based on early sports sampling and shoulder exercises will decrease the incidence of chronic shoulder injury in tennis players. Methods: Search of medical literature was performed using keywords such as: "Tennis injury", "sports specialization", "shoulder injury prevention", "upper extremity overuse", "sports sampling." All types of studies were accepted that were published in English after 2010 until 2022. All articles were reviewed and approved for the use in this study by the investigators. A total of 14 articles were identified and reviewed. Results: Sports specialization is increasing among the population of young athletes aspiring to become professionals. However, sports specialization increases the risk of overuse injury, psychological distress, and burnout, which leads to abandoning the sport. Athletes that specialize earlier have overall shorter professional careers and a greater incidence of injury. Prevention strategies that include early sports sampling were found to decrease the negative effects of specialization while not hindering the positive effects. There is no conclusive evidence that stretching or strengthening programs reduce the negative effects of early sports specialization. Conclusion: Early sampling should be encouraged in athletes. After identification of a "main" sport, specialization can be considered starting in adolescence. For the minimal number of players that reach professional levels, the benefits of sampling outweigh the benefits of specialization at an early age. Acknowledgements: I would like to thank Dr. W. Micheo for his mentorship along this project.

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Collaborative Enterococcus Detection to Assess Water Quality at Crash Boat and Rompeolas Beaches in Aguadilla using IDEXX Quanti-tray Analysis

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Background & Objectives: Fecal bacteria levels are established by regulatory agencies, yet there is a lack of information available in Puerto Rico, which must be addressed to ensure public health safety. We partnered with non-profit environmental organization Surfrider Foundation, to examine enterococcus concentrations after Hurricane Fiona's passing and compare fecal indicators to inform public risks to relevant authorities. Methods: Sampling took place in Crash Boat and Rompeolas Beach throughout October and November of 2022. We divided each location into three to four sample zones. IDEXX pouches (100-400mL) were used to collect water, later diluted with deionized water (10-fold) and mixed with a reagent. Each sample was poured into Quanti Trays 2000 and incubated. After 24 hours, the presence of enterococcus was established with UV light to estimate the number of bacteria per 100mL. Results: Results show that 3 areas in Crash Boat and 2 areas in Romple Olas Beach surpassed the 70/100mL bacteria concentration maximum limit for it to be considered safe. October was the month with higher concentration of enterococcus for both sampling sites. These results were further confirmed with an additional method,

a DIY Coliform seven-day test. We also observed a strong correlation between precipitation and concentration of enterococcus in water. Discussion/Conclusion: The significant increase of runoff with animal feces and water residuals in both areas might be affecting the results found; other studies fortify this argument. A better understanding of the relationship between environmental factors and enterococcus concentrations is needed to determine the public health risks. This collaborative study creates a baseline of information and demonstrates the need for partnership to promote environmental health for all. Acknowledgements: This research was supported by the University of Puerto Rico-Aguadilla and the Surfrider Foundation Blue Water Taskforce.

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Dialogando a través de la computadora: El uso de dinámicas interactivas y la cultura popular como estrategias de comunicación con adolescentes

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Trasfondo y objetivos: En el 2022, el proyecto PROSa de la Universidad Albizu decidió habilitar un espacio virtual y participativo para conversar y problematizar temas de salud pública con jóvenes de 13 a 17 años denominados GEN-ZRS ADVI-ZRS con el fin de integrar la voz de les jóvenes dentro de la planificación del programa. Se exploraron sus percepciones sobre la salud sexual positiva, se intercambiaron experiencias personales y familiares, se validaron lecciones aprendidas y se recomendaron estrategias para mejorar la diseminación de material educativo. Método: En cada sesión, con un promedio de 12 participantes, se discutía la tarea asignada, se presentaba un tema de salud y se desarrollaban dinámicas de aprendizaje e introspección basadas en videojuegos, películas y otros de la cultura popular. También se realizaban ejercicios de sondeo, Kahoot!, diseños en Canva, nubes de palabras y escalas de opinión y priorización. Resultados: Entre los logros más significativos se encuentran: identificar conocimientos y actitudes en torno a la salud pública; crear un perfil de adolescentes para PROSa impactar; desarrollar mensajes de prevención; obtener insumo para programas de prevención locales y trabajar con alternativas saludables para resolución de conflictos en sus familias. Conclusión: El uso de métodos interactivos, conexión virtual y vinculación con la cultura popular facilitaron que se pudieran expresar abiertamente, estimuló la participación activa y promovió que replicaran lo aprendido en sus respectivas comunidades. Se ratificó la influencia e impacto de las redes sociales en su diario vivir, así como la necesidad de crear nuevos espacios para dialogar sobre distintas inquietudes de la salud pública. Sin embargo, todavía no se ha explorado suficientemente el desarrollo de contenido salubrista hechos por y para jóvenes (Brown, 2014). Es indispensable continuar generando estrategias colaborativas entre el campo salubrista y la comunidad adolescente, para así promover un futuro liderado por conocimiento e innovación. Reconocimientos: Este proyecto fue apoyado por la subvención federal TP1AH000244. Se le agradece de igual manera a todos les jóvenes que asintieron a participar durante la trayectoria del proyecto. Brown, B. (2014). Public Health Education Using Pop Culture and Media. Frontiers in Public Health, 2, 231. https://doi.org/10.3389/fpubh.2014.00231

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Impact of a Physical Therapy Intervention on Quality of Life in Children and Adolescents with Systemic Lupus Erythematosus

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Background and objectives: Pediatric patients with Systemic Lupus Erythematosus (SLE) may experience barriers caused by the disease that decrease physical activity levels (PA) and overall health and functioning. This study aimed to examine the effect of

an educational intervention in physiotherapy among children and adolescents with SLE to improve PA and perceived quality of life. Method: This study followed a one-group pre-test-post-test pre-experimental design. Twelve children and adolescents with an SLE diagnosis and between 12-21 years of age participated in the intervention. The Pediatric Quality of Life Inventory Rheumatology (Peds-QL-RM) was assessed at baseline and week 4 of follow-up. Results: The mean age of the participants was 13.0 ± 20.0 years (17.08). Fifty-eight percent lived with their parents and siblings, while 50% were university students. A total of 12 co-occurring conditions were reported, including anxiety (19.44%), arthritis (13.89%), and hypertension (13.89%). A significant increase in the Peds-QL-RM was found from baseline to week four of follow-up, with a median of 45.39 (p=0.008). When we look at the medians by factor, we found significant improvements in the self-perception of quality of life for the dimensions of pain and hurt (p=0.036), concern (p=0.016) and communication (p=0.017). Conclusion: Participation in the intervention positively affected the rheumatology-specific quality of life and improved perceptions of pain, concern, and communication. These findings support PA interventions' potential psychological and physical benefits for children with SLE. Although the sample size is a key limitation, this design allowed us to assess the feasibility factors that need attention to implement this type of intervention successfully. Acknowledgments: This project was achieved thanks to the collaboration of the Doctor of Physical Therapy Program and the Division of Pediatric Nephrology in the External Clinics of the School of Medicine in Medical Sciences Campus, University of Puerto Rico.

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Rare case of ITP in a 1 year old

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Purpose: The purpose is to inform pediatric physicians about cases that responded well to Eltrombopag (Promacta) although its use is rare. It is very unusual to use second line therapy in the treatment of ITP, because it usually responds to intravenous immunoglobulins (IVIG). Case description: 1 year old female with no past medical history presented to the ED with hematomas and petechiae. Mother noticed hematomas on extremities that later spread to thorax and face. Two days later she was taken to the ED were laboratories showed platelet levels <1,000k. Mother denied any recent illness or fever. Reported history of recent vaccination with Flu vaccine 1 week before symptoms. Patient was admitted to PICU due to being at risk of bleeding due to severe thrombocytopenia. Patient initially started with IVIG without response after 3 doses. Then steroids IV and PO were given, and platelets continued to be below 10k. Eltrombopag was started and 2 weeks later platelet levels increased above 100k. Invitae panel for congenital thrombocytopenia and immune deficiencies came back negative. Bone marrow aspirate and biopsy were done to evaluate for malignancy and came back negative. Conclusion: The enfaces of this case is to expose the use of Promacta in certain pediatric patients with refractory ITP, before doing surgical interventions such as splenectomy which is the last resort. Through this case we can see that Promacta can be used safely and effectively in pediatric population with refractory ITP. Further studies should be done to see if there is a reasonable decrease in surgical interventions in pediatric patients with ITP vs using second line therapy and prevent splenectomy. Acknowledgement: There is no conflict of interest or financial disclosure to be made for this investigation.

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Secondary hemophagocytic lymphohistiocytosis associated to classic Hodgkin's lymphoma in a pediatric patient

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Hemophagocytic lymphohistiocytosis (HLH) is a rare syndrome characterized by macrophage proliferation

resulting in phagocytosis of hematopoetic cells. Clinical features include fever, hepatosplenomegaly, cytopenia, altered liver function, hyperferritinemia, hypertriglyceridemia, and low plasma fibrinogen levels. Secondary HLH is most commonly associated to severe infection or malignancy in elderly adults. We describe a case of a 13 year old male who presented to the hospital with a left sided neck mass and febrile episodes of 2 months evolution. Imaging on arrival revealed a mediastinal mass and hepatospenomegaly. Lab work was notable for pancytopenia, hyperferritinemia, and transaminitis concerning for HLH. Due to this clinical concern he was started on high dose steroid regimen with clinical and laboratory improvement. Neck mass biopsy later revealed classic Hodgkin's lymphoma. This case illustrates a rare presentation of classic Hodgkin's lymphoma in a pediatric patient. Recognition of HLH syndrome is critical for appropriate therapy and prevention of potential life threatening side effects.

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Estimado del Dolor en Pacientes Puertorriqueños con Cáncer Colorrectal y Ginecológico.

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Trasfondo y Objetivos: El dolor se asocia con un tiempo de recuperación prolongado e interfiere con la funcionabilidad del paciente (Abitbol, et al. 2019). Existen pocos estudios que hayan utilizado el Cuestionario Breve del Dolor (forma corta), para evaluar la intensidad de dolor en la fase preoperatoria y comparar con el dolor post-operatorio en pacientes con cáncer. Los objetivos formulados para este estudio incluyen: 1. Describir la presencia o ausencia e intensidad del dolor en pacientes con cáncer colorrectal y ginecológico durante la fase preoperatoria, 2. Evaluar el impacto del dolor en aspectos de la vida de los pacientes, 3. Comparar la presencia e intensidad del dolor preoperatorio con la intensidad del dolor post operatorio (a las 24 horas) en pacientes con cáncer colorrectal o pacientes con cáncer ginecológico. Método: Se realizó un estudio cuantitativo de análisis descriptivo, exploratorio. La muestra incluyó 20 participantes del Centro Comprensivo de Cáncer de la Universidad de Puerto Rico. Se utilizaron estadísticas descriptivas y para determinar diferencias entre la intensidad de dolor se utilizó la Prueba de Rango Wilcoxon. Resultados: El 25% de los participantes experimentó dolor pre-operatorio. La mayoría de los participantes; el 65%, experimentó dolor agudo post-operatorio de intensidad leve. No hubo diferencia significativa para determinar que la presencia e intensidad del dolor preoperatorio con la intensidad del dolor post operatorio (a las 24 horas) en pacientes con cáncer colorrectal o pacientes con cáncer ginecológico fue diferente. Sin embargo, se pudo identificar varios aspectos de la vida que se afectan por el dolor preoperatorio. Conclusión: Los hallazgos de este estudio pueden contribuir en la profesión de enfermería para la identificación y manejo adecuado de dolor en pacientes con cáncer antes y después de algún procedimiento quirúrgico. Agradecimiento: Se agradece al Centro Comprensivo de Cáncer de la Universidad de Puerto Rico.

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Salud y Paisaje: una relación bioética

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Este trabajo pretende analizar la relación compleja entre salud y paisaje y su relevancia actual en el ámbito hospitalario. ¿Cómo afecta el paisaje que integra la vida vegetal en los estados mentales y la percepción de la salud y el bienestar? ¿Cómo se relaciona el paisaje con la enfermedad? ¿Cuáles son las dimensiones de esta compleja relación entre salud y paisaje y cómo afecta esto en el ambiente hospitalario? ¿Cuánta conciencia se ha tenido sobre el rol del paisaje con vida vegetal en el tratamiento de la enfermedad y la organización y diseño de los hospitales? ¿Cuánta relevancia ha tenido el paisaje y sus consecuencias en la noción de salud pública? El Paisaje que integra o elimina elementos del reino vegetal es un producto cultural complejo y manifiesta valores que una determinada época, clase social, poder o ideología impone a los espacios donde se desenvuelve la vida humana. Los espacios

desencadenan una interacción multifactorial donde intervienen por ejemplo el poder, la memoria, la identidad, la historia, la imaginación, la cultura y la subjetividad. Cada paisaje tiene efectos medibles en la conducta humana y en el mundo percibido por los mismos. Aunque la modernidad ha tendido a eliminar el reino vegetal del horizonte perceptivo, la biophilia (Edward O. Wilson) ha estudiado cómo el paisaje con formas distintas de vida tiene un impacto fisiológico, neurológico y emocional no sólo en los pacientes con determinadas enfermedades sino en toda la vida del parque humano. Esta relación humana con otras formas de vida en un paisaje determinado y su efecto terapéutico tiene un trasfondo genético y evolutivo. La bioética clínica y de salud pública tiene especial interés en investigar este fenómeno.

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Standardizing the Evaluation and Management of Necrotizing Enterocolitis in a Level IV NICU

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Objectives: Necrotizing enterocolitis (NEC) is a severe intestinal inflammatory disease and a leading cause of morbidity and mortality in NICUs. Management of NEC is variable because of the lack of evidence-based recommendations. It is widely accepted that standardization of patient care leads to improved outcomes. This quality improvement project aimed to decrease variation in the evaluation and management of NEC in a Level IV NICU. Methods: A multidisciplinary team investigated institutional variation in NEC management and developed a standardized guideline and electronic medical record tools to assist in evaluation and management. Retrospective baseline data were collected for 2 years previously and prospectively for 3.5 years after interventions. Outcomes included the ratio of observed-to-expected days of antibiotics and nil per os (NPO) on the basis of the novel guidelines and the percentage of cases treated with piperacillin/tazobactam. Balancing measures were death, surgery, and antifungal use. Results: Over 5.5 years, there were 124 evaluations for NEC. Special cause variation was noted in the observed-to-expected antibiotic and NPO days ratios, decreasing from 1.94 to 1.18 and 1.69 to 1.14, respectively. Piperacillin/tazobactam utilization increased from 30% to 91%. There were no increases in antifungal use, surgery, or death. Conclusions: Variation in evaluation and management of NEC decreased after initiation of a guideline and supporting electronic medical record tools, with fewer antibiotic and NPO days without an increase in morbidity or mortality. A quality improvement approach can benefit patients and decrease variability, even in diseases with limited evidence-based standards. Mentor: Juan Matute MD, MGH department of pediatrics

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Isolated Abducens Nerve Palsy: An unusual presentation of a demyelinating disease

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Introduction/Purpose: Multiple sclerosis (MS) is a chronic disease which affects the central nervous system. MS occurs when the immune system attacks the nerve fibers and myelin sheath in the brain and spinal cord. MS is unpredictable and affects each patient in different ways. This project, aims to describe an unusual and rare clinical presentation of MS on a 17-year-old female patient. We also aim to discuss the pathophysiology and diagnostic criteria of MS. Case Description: 17-year-old female patient with a medical history of myopia that presented to the ER due to right periorbital pressure since 2 days prior to admission. The patient referred she started developing gradual right periorbital pressure-like pain, progressing then to intermittent headaches, dizziness, nausea, photophobia and double vision, requiring her to look down often while walking. Physical examination was only remarkable for nonedematous, mild right periorbital erythema and edema, right abducens nerve palsy, and inability to frown or lift the eyebrows bilaterally. After her

initial evaluation, several differential diagnoses were considered, including anatomic, infectious and demyelinating disorders. After consulting Neurology service, Head and Cervical MRIs were performed, which were remarkable for extensive hyperintense white matter lesions, most are periventricular in distribution, involving corpus callosum, left corona radiata, and right medullopontine sulcus, findings highly suggestive of MS. Therefore, treatment with high-dose steroid pulse was started for five days. After completion of therapy, patient's symptoms improved significantly and she was discharged home. Neurology follow-up was recommended and as well as Neuro-Immunology work up to be performed in an outpatient setting. Conclusion: MS may affect some individuals mildly while others may lose their ability to do functions of daily life. This patient's presentation is extremely uncommon at this age and as it can be difficult to identify and diagnose, therefore delaying needed treatment and management. Acknowledgements: None

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La contribución académica-profesional del Instituto de Historia de las Ciencias de la Salud (IHICIS) del Recinto de Ciencias Médicas en su veinte aniversario (2003-2023).

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Antecedentes y objetivos: El Instituto de Historia de las Ciencias de la Salud (IHICIS) se establece oficialmente en marzo del 2003, como un esfuerzo de la Escuela de Medicina, la Escuela Graduada de Salud Pública y del Decanato de Asuntos Académicos del Recinto de Ciencias Médicas (RCM). Los objetivos de IHICIS son: Fomentar el desarrollo de investigación y publicaciones históricas en las ciencias de la salud en Puerto Rico y el Caribe; Estimular la participación de las facultades RCM en el estudio y la documentación del desarrollo histórico de sus disciplinas; Promover el enriquecimiento, la preservación y el uso de las colecciones históricas existentes en el RCM; Apoyar el desarrollo de la facultad en el área de la investigación histórica; y Establecer vínculos y colaboración con investigadores y centros afines, en y fuera de Puerto Rico. Métodos: IHICIS ejerce sus funciones mediante una estructura representativa de las seis escuelas del RCM, Investigadores Adjuntos y otros miembros que representan entidades históricas externas. Resultados: En los veinte años de funcionamiento de IHICIS (2003-2023), se ha logrado: Consolidar una masa crítica de investigadores históricos de las Ciencias de la Salud; Identificar miembros de la comunidad académica con interés en diversos temas históricos relacionados a la salud; Institucionalizar la Cumbre de Historia de las Ciencias de la Salud; Desarrollar un programa regular de conferencias y presentaciones sobre esta temática; Apoyar la investigación histórica en ciencias de la salud facilitando el acceso físico y digital a fuentes primarias disponibles en el RCM; y Maximizar el uso de las telecomunicaciones y el Internet para ampliar el alcance de las actividades de IHICIS. Conclusiones: IHICIS se consolida como una unidad académica de excelencia en la capacitación e investigación de asuntos históricos de pertinencia a nivel de Puerto Rico y a nivel internacional.

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Design and development of Mi Guía de Asistencia Tecnológica WebAPP for older Hispanics with disabilities in daily activities

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Background & Objectives: Functional disability in older people can be compensated by using assistive technology (AT) devices to increase their independence, safety, and quality of life. Hispanics are among the least likely to use AT and the population most in need of AT given their high prevalence of disabilities in daily activities. We aimed to develop and test the usability of an AT WebAPP for independent-living older adults with functional disabilities. Methods: We used a co-design process guided by the Honeycomb Model to develop the WebAPP. In Phase one we developed the WebAPP content based on the AT needs and functional limitations of older Puerto Ricans found in our previous studies. In Phase II we used evidence-based guidelines to design the WebAPP. In Phase III we conducted the usability testing using focus groups and individual interviews with 14 older adults. We used a directed content analysis with member checks for the interpretation of the results. Results: Mi Guía de Asistencia Tecnológica (MGAT) was developed with 94 AT devices in eight areas of daily activities. The MGAT includes the description, cost, benefits, considerations, and resources for acquiring the devices. It also includes photos and videos of older people using AT. The participants reported that the MGAT was easy to navigate and use, accessible for visual, motor, and cognitive changes, credible, desirable, useful, and valuable for increasing their knowledge of AT which improves independence and function. Several recommendations were provided for enhancing the MGAT. Conclusions: The MGAT was usable and useful evidenced by the participants' positive experiences about how they felt, used, and thought about the MGAT. These findings serve as a foundation for informing the development of efficient AT information strategies using such technology as a first step to enhancing AT adoption and use among older people. Approved by IRB. This research was supported by HiREC-NIMHD S21MD001830 and RCMI Grant U54-MD007600.

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Programa Tomando Control de su Salud

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Durante más de 3 décadas las enfermedades crónicas no transmisibles han ocupado las primeras causas de muerte en PR1 y el mundo. Aproximadamente el 68% (1,857,960) de los adultos de 18 años o más en PR padece de al menos una enfermedad crónica2. El Programa Tomando Control de su Salud es una iniciativa basada en evidencia, con el fin de promover estilos de vida saludables en la población con enfermedades crónicas. El programa se compone de 6 talleres educativos que se ofrecen durante 6 semanas consecutivas. Se utilizan instrumentos de pre y post pruebas para evaluar el cambio en conducta y satisfacción de los participantes. Para este estudio se realizaron análisis descriptivos y de comparación a una muestra de 227 individuos que participaron en las 15 intervenciones durante febrero a agosto 2022. El 90% de los participantes eran mujeres, con una mediana de edad de 72 años, bajo nivel de escolaridad (49%), viudos (27%), retirados (75%), que residen en su hogar (73%) y beneficiario de medicare (49%). El 84% era una persona que vive con enfermedades crónicas, entre las enfermedades más frecuentes fueron hipertensión (53%), artritis (44%), diabetes (44%) y colesterol elevado (36%). Se observó un aumento en el consumo de frutas (25%), vegetales (22%), actividad física (39%), confianza en manejar su condición (42%) y mejora en su estatus de salud (15%). El 85% no visitó sala de emergencia y el 65% visitó a su generalista. Los participantes demostraron un aumento en actividad física, consumo de frutas y vegetales y confianza en los participantes para manejar su enfermedad crónica. Se debe continuar promoviendo, expandiendo y fortaleciendo programas como este, basados en evidencia, que mejoran los estilos de vida y el manejo y control de las enfermedades crónicas. Fuente Financiación: Este estudio es subsidiado por fondos de CDC-DP19-1901 & PHHS Block Grant. Agradecimiento:

Agradecemos a todos los líderes y master trainers por su extraordinaria labor en la comunidad. Referencia: 1. Registro Demográfico, Departamento de Salud de Puerto Rico, 2021, Puerto Rico Behavioral Risk Factor Surveillance System (PR-BRFSS), 2021

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Production of novel variants of HIV-1 Env trimers using FreeStyle CHO-S expression system

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The Caribbean has the highest HIV prevalence in the Americas with almost 590,000 adult individuals infected1. With millions infected worldwide there is a pressing need to develop a functional HIV vaccine. To date, the most promising vaccine candidates are engineered versions of the HIV envelope protein (Env) with modified regions that improve stability and immunogenicity. In efforts to develop a widely accessible vaccine, we introduce a family of newly designed versions of HIV-1 Env gp145 that were developed through domain repositioning. First, we transfected FreeStyle CHO cells with plasmids harboring Env versions of the BG505 and Co6980v0c22 env. Our results show that production titers at harvest surpass 52.330 ± 0.969 µg/mL. Following purification by size exclusion chromatography (SEC) and analysis by native gel electrophoresis, we determined that our modified gp145 have a native-like trimeric arrangement, which is considered a critical vaccine parameter. Overall, the results presented here evidence the production of Env gp145 variants that are soluble and stable even though they contain the typically unstable membrane-proximal external region (MPER). These results support domain repositioning as a viable strategy for the design of Env derived HIV vaccine candidates and support the feasibility of introducing new biologics into Puerto Rico's biopharmaceutical pipeline. Funding: NIGMS-RISE R25 GM061838. 1. UNFPA. The UNFPA Sub-Regional Office for the Caribbean (SROC). HIV & AIDS https://caribbean.unfpa.org/en/node/19856 (2022). 2. Doran, R. C. et al. GP120 with improved binding to broadly neutralizing antibodies. Front Immunol 9, 1–13 (2018). 3. González-Feliciano, J. A. et al. A reversed phase HPLC method for the quantification of HIV gp145 glycoprotein levels from cell culture supernatants. J Chromatogr B Analyt Technol Biomed Life Sci 1167, (2021). 4. Mascarenhas, N. M. & Gosavi, S. Understanding protein domain-swapping using structure-based models of protein folding. Progress in Biophysics and Molecular Biology vol. 128 113–120 Preprint at https://doi.org/10.1016/j.pbiomolbio.2016.09.013 (2017). 5. Wieczorek, L. et al. Comparable Antigenicity and Immunogenicity of Oligomeric Forms of a Novel, Acute HIV-1 Subtype C gp145 Envelope for Use in Preclinical and Clinical Vaccine Research. J Virol 89, 7478–7493 (2015). 6. Luthra, A. et al. Stable, high yield expression of gp145 Env glycoprotein from HIV-1 in mammalian cells. Biologicals 73, 16–23 (2021).

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Uso de sustancias entre los universitarios: un problema de salud pública

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Trasfondo: Las investigaciones sobre el uso de sustancias entre estudiantes universitarios en diferentes partes del mundo plantean que un sector de este grupo experimenta consecuencias negativas asociadas con su uso, tales como: un rendimiento académico más bajo, comportamientos de riesgo, problemas emocionales, problemas legales y de salud. El objetivo principal de este estudio es describir los patrones de uso de sustancias en la población de estudiantes universitarios en dos recintos de la Universidad de Puerto Rico (Bayamón y Carolina). Métodos: Se elaboró un cuestionario constituido por 56 preguntas que abordan 6 dominios temáticos: tipos de sustancias, principales razones de uso,

contextos de uso, consecuencias principales, manejo de consecuencias y estrés académico. El instrumento se validó mediante 3 pruebas piloto con estudiantes otros recintos de la UPR y una evaluación por un panel de jueces expertos. Se encuestaron 778 estudiantes de los recintos de UPRCA (n= 321) y UPRB (n=459). Resultados: Los resultados indican que el 65.3% de los participantes han usado sustancias alguna vez en su vida, un 76% de los participantes reportaron utilizar más de una sustancia a la vez. De las sustancias que combinan, seleccionaron con mayor frecuencia alcohol, marihuana, cigarrillos electrónicos, cafeína y cigarrillos y bebidas energizantes. Las razones principales que reportaron para utilizar sustancias fueron: diversión y rendimiento académico. El 93.6% reportó haber experimentado estrés académico durante el transcurso del semestre. La fuente de estrés académico más reportada fue la sobrecarga de tareas académicas. Un modelo de regresión logística estableció que las variables estrés académico y edad tiene un efecto significativo en la probabilidad de observar uso de sustancias entre esta población. Conclusión: Los resultados del estudio reflejan patrones de uso de sustancias altamente específicas a las dinámicas del contexto universitario. Agradecimiento: Esta investigación fue apoyada por el Instituto de Investigaciones Psicológicas de la UPR.

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The association of psychological distress and cardiovascular health among young adults in Puerto Rico

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Background & Objectives: Evidence links psychological distress with cardiovascular risk factors and outcomes, but these associations have not been assessed among young adults in PR. Given the elevated levels of disaster-related stressors experienced by Puerto Ricans in the past six years, we assessed the association between psychological distress and cardiovascular health (CVH) in young adults. Methods: Data from the PR-OUTLOOK study (2020-2022) were used (n=964; ages 18-29 years). Psychological distress measures included depressive symptoms (CES-D 10: ≥10, <10), anxiety symptoms (10-item Spielberger Trait Anxiety Scale tertiles: 10-20, 21-24, 25-40), perceived stress (4-item Cohen Perceived Stress Scale: ≥6, <6), and post-traumatic stress disorder (2-item PTSD Civilian Abbreviated Scale: ≥4, <4). CVH was measured using the American Heart Association Life Simple's 8, a composite measure of eight behavioral and biological factors (nicotine exposure, physical activity, diet, sleep health, blood pressure, blood glucose, and lipids). Higher scores (range 0-100) indicate better CVH. Linear regression was used to assess the association of psychological distress with overall CVH score adjusting for age, sex, marital status, and childhood material deprivation. Results: The mean age of participants was 22.6 ±3.1, and two-thirds were females. A sizable proportion of participants reported greater psychological distress: depressive symptoms (59.5%), anxiety symptoms (27.6%), stress (64.8%), and PTSD (77.2%). Overall mean CVH score was 80.2±12.8, with 42.8% having a score below 80. Significant inverse associations were observed between overall CVH and depressive symptoms (β=-4.21, 95% CI: -5.84, -2.58), perceived stress (β=-2.76, 95% CI: -4.41, -1.10), anxiety symptoms (tertile 2 vs. tertile 1: β=-2.49, 95% CI: -4.42, -0.57; tertile 3 vs. tertile 1: β=-5.56, 95% CI: -7.51, -3.62), and PTSD (β=-3.26, 95% CI: -5.18, -1.35). Conclusion: Psychological distress measures were inversely associated with CVH. Efforts to promote CVH among young adults may require a multi-domain approach that includes interventions targeting their mental health. Acknowledgement: This work was supported by the National Heart, Lung, and Blood Institute (grant R01HL149119) and partially supported by the

Hispanic Alliance for Clinical and Translational Research (NIGMS U54GM133807). The study was approved by the UPR-MSC IRB (protocol number 6050319).

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Incidence of Cadaveric Variations of Brachial Plexus Roots and Trunks

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Objective: Normal anatomical structure of the brachial plexus is described by the American Association for Anatomy as cervical contributions from C5 and C6 joining to form the upper trunk, cervical nerve root C7 will distally form the middle trunk, and cervical nerve root C8 joins thoracic nerve root T1, together forming the lower trunk. This research is aimed towards expanding awareness of recorded variations of the brachial plexus. Materials and Methods: This research study involved 34 brachial plexuses from 17 medical cadavers. The cadavers consisted of 11 males and 6 females. Materials used for proper dissection of the cadavers include surgical shears, spacers, paper towels, scalpels, and forceps. The posterior triangles of all cadavers were dissected to expose the brachial plexus nerve roots (C5-T1) and trunks. Anatomical structures were compared to published descriptions of normal brachial plexus. All variations of anatomical structures were recorded. Results: Anomalies discovered in the dissection of 34 brachial plexus include: 4 out of 11 male cadavers with C4-C6 joining to form the upper trunk (36%), 1 out of 6 female cadavers with C4-C6 joining to form the upper trunk (17%), 1 out of 11 male cadavers with C5-C7 joining to form the upper trunk with no middle trunk present (9%), 2 out of 6 female cadavers with C7-T1 joining to form the lower trunk with no middle trunk present (33%), and 2 out of 11 male cadavers with C7-T1 joining to form the lower trunk with no middle trunk present (18%). Conclusion: Dissection of 17 cadavers yielded a 53% chance of encountering an anatomical brachial plexus anomaly. Significance and Implication: Pathologies caused by disruption of normal brachial plexus structures and physiology create much suffering for patients. Awareness of the anatomical variations of brachial plexus roots and trunks is essential for a successful surgical procedure for reparation of damage to the brachial plexus. References: Netter FH. Atlas of Human Anatomy. 5th ed. Philadelphia, PA: Saunders/Elsevier; 2011. Moore, K. L., Persaud, T. V. N., & Torchia, M. G. (2016). The developing human: Clinically oriented embryology. (10th Ed.) Philadelphia, PA: Saunders/Elsevier. Bayot ML, Nassereddin A, Varacallo M. Anatomy, Shoulder and Upper Limb, Brachial Plexus. [Updated 2021 Jul 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK500016/. Bayot ML, Nassereddin A, Varacallo M. Anatomy, Shoulder and Upper Limb, Brachial Plexus. [Updated 2021 Jul 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK500016/

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Sex differences in cardiovascular health among young adults in Puerto Rico

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Background & Objectives: Emerging evidence supports significant variations in cardiovascular health (CVH), as defined by the American Heart Association (AHA) using "Life's Simple 7" metrics, among Hispanics in the US by sex and heritage group. Hispanic men and those of Puerto Rican background are less likely to meet favorable CVH criteria. Yet data on young men and women residing in Puerto Rico are scarce. We assessed sex differences in CVH

among young adults living in Puerto Rico. Measures: Data from the PR-OUTLOOK cohort study (2020-2022) were used (n=964; ages 18-29 years). CVH was measured using the AHA Life's Essential 8 score, a revised composite metric of physical activity, smoking, diet, sleep, BMI, blood pressure, glucose, and non-HDL cholesterol. The total score ranges from 0-100, with higher scores indicating better CVH. For this analysis, the measure was modified to exclude diet given the lack of dietary data at the time of analysis. Linear regression models were used to assess sex differences in the overall CVH score and its components adjusting for age, sex, marital status, and childhood material deprivation. Results: In adjusted analyses, women had a significantly higher overall CVH score compared to men (β=2.77, 95% CI: 1.10, 4.44). Women also had higher scores for nicotine exposure (β=9.24, 95% CI: 5.18, 13.29), non-HDL cholesterol (β =4.31, 95% CI: 1.11, 7.51), and blood pressure (β =13.22, 95% CI: 10.39, 16.05) but lower for physical activity (β =-9.55, 95% CI: -15.18, -3.91). There were no sex differences in scores for sleep health, BMI, and blood glucose. Conclusion: There are sex differences in CVH among young adults in Puerto Rico, with women having overall better CVH. Interventions to improve nicotine exposure, non-HDL cholesterol, and blood pressure in men and participation in physical activity in women are needed to enhance and preserve overall CVH. Acknowledgement: This work was supported by the National Heart, Lung, and Blood Institute (grant R01HL149119) and partially supported by the Hispanic Alliance for Clinical and Translational Research (NIGMS U54GM133807). The study was approved by the UPR-MSC IRB (protocol number 6050319).

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Shift-and-persist is associated with favorable cardiovascular health among young adults in Puerto Rico.

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Background & Objectives: Shift-and-persist (SP) is associated with favorable cardiometabolic outcomes. SP may be of great importance to individuals in Puerto Rico given their disproportionate exposure to social and environmental stressors. However, there is a scarcity of data in Latinos populations. This study examined the association between SP and cardiovascular health (CVH) among young adults in Puerto Rico. Methods: Data from the PR-OUTLOOK cohort study (2020-2022) were used (n=962; ages 18-29 years). SP was measured with the Chen & Miller scale and categorized in quartiles (SP Q1-Q4). Data from questionnaires, anthropometric measurements and fasting blood samples were used to compute the American Heart Association Life's Essential 8 metric. The following seven components were included due to unavailable dietary data physical activity, nicotine exposure, sleep health, BMI, blood lipids, blood glucose, and blood pressure. Analyses included adjusted linear regression models. Results: Mean CVH score was 80.2 + 12.8, with the lowest score for physical activity (57.1 + 43.2) and the highest for glucose (92.1 +17.5). Compared to SP Q1, individuals in the Q2-Q4 groups had significantly higher total CVH (B=2.81, 95%CI=0.60, 5.03; B=4.68, 95%CI=2.54, 6.82; and B=7.34, 95%CI=4.85, 9.83, respectively) and physical activity CVH-scores (B=-11.5, 95%CI=3.96, 19.1; B=11.6, 95%CI=4.27, 18.9; and B=18.6, 95%CI=10.1, 27.1, respectively). Individuals in the SP Q3-Q4 also had higher BMI CVH-scores (B=8.89, 95%CI=3.10, 14.7; and B=10.4, 95%CI=3.61, 17.1, respectively) than those in Q1. Additionally, those in the SP Q4 group (vs. Q1) had higher blood lipids (B=7.10, 95%CI=2.24, 12.0), blood glucose (B=3.91, 95%CI=0.41, 7.41), and blood pressure (B=6.23, 95%CI=1.93, 10.5) CVH-scores. Conclusion: Higher SP scores were associated with higher CVH among young adults in Puerto Rico. Longitudinal studies are needed to understand

the potential benefits of SP for CVH and identify strategies to improve SP and promote CVH in underserved populations. Acknowledgement: This work was supported by the National Heart, Lung, and Blood Institute (grant R01HL149119) and partially supported by the Hispanic Alliance for Clinical and Translational Research (NIGMS U54GM133807). The study was approved by the UPR-MSC IRB (protocol number 6050319).

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Características del sueño en niños admitidos en una unidad de cuidado intensivo

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Trasfondo y Objetivos: El estrés de la enfermedad crítica, el ambiente (ruido, luces brillantes) y las intervenciones de cuidado al paciente en las Unidades de Cuidado Intensivo Pediátrico (PICU) contribuyen en la alteración del sueño. Los objetivos fueron: describir y evaluar las características del sueño en niños admitidos en PICU; evaluar la relación entre el ruido, número de intervenciones del personal clínico y la cantidad y calidad de sueño y comparar las características del sueño antes de la estadía en el PICU y una semana después del alta del hospital. Método: Estudio observacional. Las características del sueño se midieron con actigrafía. Los padres completaron un registro diario del sueño y actividades. Los niveles de presión sonora en el aire y la exposición al ruido se midieron con un dosímetro portátil. Se administró a los padres el Cuestionario de Hábitos del Sueño en Niños (CSHQ) para detección de problemas del sueño del niño. Resultados: Se evaluaron 30 niños con una edad de 13.33 ± 3.53. Los niños despertaron 21.63 ± 14.10 veces en un tiempo total de 8.06 ± 3.55 horas de sueño. El promedio del nivel de presión sonora fue 61.19 dB(A) ± 2.16. La dosis de ruido fue 4737.65% ± 2587.73. Las intervenciones moderadas fueron 28.45 ± 3.87 y el cuestionario CSHQ obtuvo una puntuación de 43.7 previo al PICU y 41.4 después del alta. Conclusión: Aunque los niños lograron la cantidad de tiempo mínima de sueño, se expusieron a un nivel de presión sonora mayor a lo recomendado por la EPA y la OMS. Estuvieron expuestos a más del 100% de la dosis de ruido en 24 horas. Mientras mayor el nivel de presión sonora, mayor fue la cantidad de movimientos, indicativo de estar despierto. El CSHQ reflejó puntuaciones que sugieren problemas de sueño. Agradecimiento: Grupo Intensivo Pediátrico.

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Uncovering the Gut Microbial Diversity of Diaprepes abbreviatus (Coleoptera: Curculionidae) using Nanopore Sequencing Technology

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Background and Objectives: Diaprepes abbreviatus is an insidious pest of economic crops in tropical areas. Citrus, vegetables, and fruits are amongst those affected. The principal control method is chemical pesticides, with obvious negative impacts on the environment and public health. Control approaches are being developed using the pest digestion processes as targets since their development and growth may be influenced by their gut microbiome. Nevertheless, data on D. abbreviatus gut microbiome remains scarce. New methods are being created so we can study microorganisms easily. The Oxford Nanopore Sequencer (MinIon) is a portable ease to use equipment that works by monitoring changes to an electrical current as nucleic acids are passed through a protein nanopore. The resulting signal is decoded to provide the specific DNA or RNA sequence in single reads, permitting identification of bacterial species in less than 24 hours. For that reason, the purpose of this study is to optimize the MinIon PCR and sequencing protocols to characterize the gut microbial profiles of the gut of D. abbreviatus. Methods: To identify the different pH of the gut, insects were fed bromophenol blue in 1% agarose, dissected and the DNA was extracted. We are testing different primers and PCR conditions to amplify the D. abbreviatus gut DNA so we can sequence the 16s rRNA, since establish methods did not amplify

nor sequence it. Results: We identified six different regions of the gut, the esophagus being the most basic while the middle gut being the most acidic. So far, we have obtained that the best annealing temperature is 58°C, degenerated 1492R and 27F universal primers give higher DNA yield and that Long Amp along with degenerated primers work best to amplify the D. abbreviatus DNA. Next step will be to conduct the 16srRNA sequencing along with the bioinformatic and statistical analyses. Acknowledgements: We thank Yilmaz Koru for his help. This research is sponsored by RISE Program 5R25GM061151-21 and the NSF DNA Sequencing Course 5-34272.

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Programa de Pre-Médica: Reclutamiento de Estudiantes de Escuela Pública en la Escuela de Medicina de la Universidad de Puerto Rico

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Trasfondo y Objetivo: Los estudiantes de trasfondos desventajados y, que a su vez proceden de escuelas públicas representan en promedio el 23% del total de estudiantes admitidos en la Escuela de Medicina de la UPR. La fórmula matemática utilizada en el proceso de admisión dificulta el éxito de los solicitantes. El Centro Hispano de Excelencia ha enfocado sus esfuerzos en desarrollar estrategias de reclutamiento para reducir esta disparidad. Particularmente, el Programa de Pre-Médica está dirigido a estudiantes subgraduados de la UPR procedentes de escuelas públicas interesados en ser admitidos a Medicina. El objetivo de este Programa es aumentar el número de estudiantes procedentes de escuela pública en la Escuela de Medicina de la UPR. Metodología: Se analizaron los datos de los informes administrativos del 2019 al 2021 y se evaluaron utilizando el Modelo de Evaluación "Robert L. Hammond". Resultados: Durante el periodo analizado, el Programa de Pre-Médica impactó a 125 estudiantes con las siguientes características sociodemográficas: 33% se identificaron como negros o afrocaribeños, 52% de procedencia rural; y 42% con ingresos bajo el nivel de pobreza. El 46% de los estudiantes participantes están completando requisitos generales para finalizar su bachillerato. El 25% ya logró admisión en Escuelas de Medicina en P.R. (12 estudiantes en la UPR) o en el extranjero. El 8% ha sido admitido a alguna otra profesión de la salud y el resto se encuentra en proceso de solicitud de admisión. Conclusión: A pesar de que aún existe la necesidad de continuar desarrollando estrategias de reclutamiento, el Programa de Pre-Médica ha cumplido con éxito su objetivo de aumentar el número de estudiantes de trasfondos desventajados, procedentes de escuela pública tanto en la Escuela de Medicina de la UPR, como en otras instituciones de educación superior. Afiliaciones: El Centro Hispano de Excelencia es subvencionado por la Administración de Recursos y Servicios de Salud (HRSA, por sus siglas en inglés) del Departamento de Salud de los Estados Unidos, Grant No. D34HP4463.

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Novel compounds targeting Plasmodium glutathione S-transferase with activity in multiple parasitic stages.

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Multidrug-resistant Plasmodium parasites are increasing at an alarming rate, representing a threat to malaria control worldwide. Novel antimalarial drugs that inhibit multiple parasitic stages are necessary to treat malaria and interrupt transmission. Our laboratory previously identified seven

antiplasmodial compounds in an in silico screening against Plasmodium glutathione S-transferase active in P. berghei intraerythrocytic stages. This project aims to validate the inhibition of the predicted target, glutathione S-transferase, and to evaluate the compounds' antiplasmodial activity against other parasite stages. Some compounds inhibit P. falciparum and P. berghei glutathione S-transferase. Preliminary data show that the seven antiplasmodial compounds inhibit erythrocytic development in sensitive and resistant P. falciparum strains. Four compounds inhibited P. berghei ookinete formation in vitro, and three compounds inhibited P. falciparum oocyst formation in mosquitoes. No activity was detected in P. berghei microgametes. Isobologram analyses demonstrated that one of the compounds acts synergistically with currently employed antimalarials. This study supports these antiplasmodial compounds as potential leads to block transmission for further antimalarial drug development.

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Family Structure of Children with Sexual Abuse History who are Treated at the Puerto Rico Health Justice Center (PRHJC)

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Background and Objective: Adverse Childhood Experiences (i.e., sexual abuse) put children at risk of physical and emotional damage detrimental to their development. The Division of Sex Crimes and Child Abuse of the Police of PR (2020) reported that out of 766 sexual abuse cases, 74% involved children. And according to 2020 PR statistics, most victims had a familial relationship with the offender. However, there is limited data about the victim's family structure at the time of the offense, the perpetrator's portrait, and their relationship with the victim. This study aims to build an offender profile based on their social, legal, and psychiatric history, considering variables like event location, disclosure circumstances, and intimidation techniques. Methods: Data will be collected from medical records of victims of sexual abuse between the ages 0-18 who have received services at the PRHJC during the years 2015-2022 (n≈500) using REDCap. The primary outcome will be a descriptive analysis using STATA MP17. Results: The present study is in the data collection phase. Preliminary data shows that the biological father was the principal offender in most cases (21%) and 90% of the victims were female. The Police of PR was the main source of case referrals to the PRHJS. Consistently, 65% of victims show no physical evidence upon the forensic evaluation. Most of the victims (66%) were described as "obedient" in accordance with the developmental stage and age (0-6 y/o, 60%) in which they are at the time of the abuse. Conclusions: Describing this population and strengthening alliances like those with the Police of PR would likely improve maltreatment detection and early intervention. Some of the identified victim's characteristics, such as compliant tendencies and mean age at abuse, increase the propensity of victimization at the hands of offenders with previously established relationships of trust and/or authority. Acknowledgment: IRB approved. The authors have no conflicts of interest to declare. This research is supported by Puerto Rico Health Justice Center and the Intellectus Sexual Violence Research grant.

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Effects of glyphosate consumption on locomotion and rearing behavior across contexts in rats

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Background & Objectives: Glyphosate is a common herbicide that has been identified as an environmental contaminant. The use of glyphosate is correlated to increased incidence of anxiety disorders. Though initially considered safe for mammals, recent reports suggest that glyphosate increases negative valence emotional behaviors in rats. Studies evaluating

how glyphosate affects spontaneous behavioral activity, such as locomotion, supported rearing, and unsupported rearing, are lacking. Thus, we hypothesized that prolonged exposure to glyphosate will decrease locomotion and decrease rearing behavior in rats. Methods: To test this hypothesis, male rats (n=13) had access ad libitum to glyphosate-contaminated water, and filtered water for controls, for 16 weeks. Glyphosate did not affect bodyweight gain nor water intake. Rats were recorded in three different contexts, namely large, medium, and small open fields, for a period of 2 minutes. Distance travelled and time spent immobile were obtained using ANY-maze video tracking software. Additionally, videos were manually scored by blind experimenters for supported and unsupported rearing counts. Results: Data shows that glyphosate consumption decreased total distance travelled ($p=0.0361$) and increases time spent immobile ($p=0.0313$) only in the large open field. Furthermore, glyphosate decreased supported rearing behavior only in the small open field ($p=0.0356$) and increased unsupported rearing only in the medium open field ($p=0.0147$). Conclusion: Taken together, our results suggest that glyphosate consumption may affect these behaviors in a context-dependent manner. Future directions include assessing these behaviors in a social interaction context. Additionally, we will assess brain tissue for changes in biomarkers of neuronal activity in the dorsal CA1 region of the hippocampus, a brain region implicated in context recognition. The results of this study will allow us to elucidate the potential effects that glyphosate may have on the brain, and how these effects could manifest as aberrant behaviors in rats. Acknowledgements: This research project was supported by NIH/NINDS R21 NS119991 NIH/NIEHS R21 ES034191; RCMI Seed monies and Pilot Project Program 8G12MD007600 (Fernández); NIGMS/NIH Center of Biomedical Research Excellence (COBRE II); Brain and Behavior Research Foundation (NARSAD); Puerto Rico Center Clinical Translational Research Consortium (PRCTRC); NSF-CREST PRCEN (undergraduate & graduate fellowships); NIH BP-ENDURE NeuroID and R25DK113652 from the NIH NINDS.

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Recinto Pa' la Calle: Hacia un colectivo de reducción de daños

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Trasfondo: Recinto Pa' la Calle (RPC) fue creado en el 2011 por estudiantes de la Universidad de Puerto Rico, Recinto de Ciencias Médicas. Sus líderes establecieron como misión el retomar espacios urbanos y conectar con personas sin hogar (PSH). Más de 10 años después de su concepción, RPC adoptó un modelo de reducción de daños, cuya meta es reducir los riesgos asociados al consumo de drogas. Los objetivos actualizados de RPC incluyen cubrir las necesidades inmediatas de PSH y personas que usan drogas (PQUD) y educar a la comunidad sobre la reducción de daños. Métodos: Cada dos lunes, un grupo de voluntarios visita espacios aledaños al Recinto para ofrecer materiales higiénicos, limpieza de úlceras y alimentos a PSH/PQUD. Además de este trabajo, el liderazgo de RPC recibe capacitación por medio de líderes graduados y conferencias de entidades como la National Harm Reduction Coalition. Con estas experiencias, nutrieron su taller anual para voluntarios, incluyendo charlas sobre la autonomía, la dignidad y las experiencias de las PSH/PQUD desde una perspectiva biopsicosocial. Resultados: La transformación de RPC resultó en colaboraciones con organizaciones comunitarias y gubernamentales como Oasis de Esperanza y la Administración de Servicios de Salud Mental y Contra la Adicción. Dichos enlaces facilitaron la distribución de naloxona y la capacidad de vincular participantes a servicios de salud. En adición, el taller anual prepara a decenas de voluntarios para enfrentar sus estigmas contra las PSH/PQUD. Conclusiones: A corto plazo, RPC proyecta optimizar sus servicios a través de la toma de datos y el intercambio de jeringuillas. A largo plazo, RPC opta por el desarrollo de una red de apoyo dentro del sistema de salud para personas experimentando pobreza, sinhogarismo y adicción.

RPC trabaja para que tanto profesionales en salud como la comunidad puertorriqueña se acerquen con empatía a las experiencias de las PSH/PQUD. Agradecimientos: Agradecemos las donaciones, voluntarios y líderes que sostienen la labor de RPC.

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Friends Resilience: Un currículo para promover la salud emocional de jóvenes en Puerto Rico

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Trasfondo: El programa Puerto Rico Jóvenes en Óptima Salud (PROSa) es un programa de prevención primaria que busca reducir los embarazos en jóvenes de 12-17 años y aumentar la integración de servicios en salud optima en los municipios de Canóvanas, Loíza, Morovis y Orocovis. PROSa implementa tres (3) prácticas basadas en evidencias dirigidas a jóvenes incluyendo el currículo Friends Resilience que promueve el desarrollo de habilidades socioemocionales en les jóvenes para que puedan afrontar, de forma efectiva, diversas situaciones de vida. Ha demostrado ser efectivo para reducir la depresión y ansiedad en los niños y jóvenes. Objetivos: Conocer los cambios y resultados de jóvenes que participaron en Friends entre enero a junio 2022. Metodología: Friends consiste en 10 sesiones educativas grupales implementadas de manera presencial y/o hibrida, además cuestionarios iniciales y de cierre que exploran el impacto del programa. Resultados: Se implementaron un total de 46 grupos alcanzando 807 jóvenes. Se observó que el 83.7% de les participantes completaron 7 de 10 sesiones educativas. Friends logró que les participantes al completar las sesiones: 1) Disminuyeron en un 5% los síntomas de depresión moderada y severa: 2) Disminuyeron en un 2% los síntomas de ansiedad severa y moderada; 3) Aumentaron en un 3.3% el uso de estrategias de afrontamiento útiles; 4) Disminuyeron el uso de estrategias de afrontamiento menos útiles; y 5) Aumentaron en un 4.2% la percepción de les jóvenes de que lo aprenden en la escuela es útil para su futuro. Además, les jóvenes expresaron alta satisfacción con el currículo y con les facilitadores. Conclusión: Friends es un PBE que puede utilizarse en PR para trabajar con la salud emocional de les jóvenes de manera efectiva. Las lecciones aprendidas durante este proceso de implementación pueden guiar la planificación de este tipo de programas en la Isla en el futuro. Subvención: Este proyecto fue posible por la subvención de HHS OPA (TP1AH000244-01-00). Approved by IRB: BRANY SBER IRB #19-028-447PR

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Facebook: A tool to promote a prevention campaign against the bite of the Aedes aegypti mosquito in times of COVID-19

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Background and Objectives: Social media has become a cost-effective way to communicate key messages to communities during emergencies, outbreaks, or public health issues. Social platforms are essential tools of the Integrated Mosquito Management to promote community engagement. During the COVID-19 pandemic, the World Health Organization urged to promote the prevention and control of arboviral diseases, in order to avoid potentially devastating consequences for the population at risk. For this reason, the Puerto Rico Vector Control Unit (PRVCU), within its risk communications plan, developed the campaign A problem that bites us all. The objective of this campaign was: implement a two-way communication strategy to promote the message of prevention against the bite of the Aedes aegypti mosquito during the COVID-19 pandemic. Method: The campaign consisted of three phases: 1) Testimonies: experiences of dengue disease, 2) Identification of the Problem: the mosquito and

its breeding sites, and 3) Prevention Measures: elimination of the breeding site. During the period from May to June 2021, publications were made three times a week (Monday, Wednesday, and Friday) following the sequence of phases. The Sprout Social program was used to carry out the publications and analysis of the campaign. Results: The campaign concluded with 27 posts and achieved an engagement rate of 3.5%, which exceeds the average of 2% established on Facebook. This indicates to us that there was a high level of user engagement with the content. Conclusion: The social network Facebook was key for PRVCU to maintain visibility in the community in times of COVID-19 and to continue its role of educating and empowering communities on the issue of prevention and protection against the Aedes aegypti mosquito. Role that was affected by the measures established to contain COVID-19 infections in the populations. Acknowledgements: To the community mobilization team and the social media team.

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FotoVoz: Generando espacios seguros para levantar las voces de jóvenes puertorriqueños/as

Torres Dávila, P., Corrada Rivera, R., Acosta Pérez, E., & Vega Torres, S.

Trasfondo y objetivos PROSa (Puerto Rico Optimal Systems Change) une varias prácticas para promover salud óptima en jóvenes puertorriqueños y prevenir embarazo durante la adolescencia. Desde la perspectiva del Desarrollo Positivo de la Juventud, es necesario incluir a jóvenes en el desarrollo de prácticas y políticas para que estas sean efectivas. Por tanto, utilizamos Foto Voz para conectar con los/las jóvenes del proyecto e indagar qué es salud óptima para ellos. Con este cartel expondremos nuestra experiencia implementando Foto Voz con jóvenes en Puerto Rico, para generar conocimiento comunitario desde la juventud. Método Foto Voz es un método de investigación de acción participativa que combina la fotografía con narrativas como herramientas para generar conocimiento. Nuestra implementación constó de dos sesiones presenciales cada una y una virtual. Durante la primera se (1) Generó cohesión grupal, (2) Presentó datos sobre salud adolescente y generaron preguntas de investigación a partir de las reacciones, (3) Explicó el método de Foto Voz, ética y hojas de trabajo y (4) Brindó un taller de fotografía. En la segunda sesión se presentaron las fotos tomadas por jóvenes en respuesta a las preguntas de investigación y colaborativamente generaron narrativas que integraron las voces de todos los participantes. Se analizaron los temas emergentes para concluir qué es salud óptima para ellos. Resultados Se implementó Foto Voz con 8 grupos entre las edades de 12-15 años de 4 municipios (Loíza, Canóvanas, Morovis y Orocovis). Diseminaron el significado de salud óptima a través de galerías virtuales, exposiciones presenciales, series de Instagram en la página de Adolesciencias y video en conferencia nacional. Conclusión Para los/las jóvenes, salud óptima implica desarrollar el bienestar socio-emocional, tener recursos para una alimentación sana y recreación, acceso a educación sexual y perspectiva de género y promover la inclusión de la diversidad en diálogos con adultos. Agradecimientos: Este proyecto es apoyado por fondos del Office of Population Affair of the U.S. Department of Health and Human Services (HHS). El contenido no representa la mirada postura oficial ni la aprobación de OPA/OASH/HHS o el Gobierno de EEUU. Para más información, visite el Facebook o Instagram en @adoles.ciencia.

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Polydrug use and suicidal behaviors among secondary school students in a nationally representative sample in Puerto Rico

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Background & objectives: A great deal of research on adolescent suicidal behavior has focused on depression and alcohol use. Major depression and mood disorders have been shown consistently to be the psychiatric disorders most highly associated with attempted suicide in adolescence. However, less attention has been given to illegal drug use, specifically

polydrug use. The objective of this study is to determine the association between suicidal attempts and polydrug use in a nationally representative sample of secondary school students in Puerto Rico. Consulta Juvenil X is a monitoring program that aims to study the prevalence of substance use and violent behavior as well as the risk factors associated with those practices. Methods: The survey was conducted during the 2018-20 academic year. The study utilizes a self-administered questionnaire. Use of two or more substances (tobacco, marijuana cocaine, heroin, or amphetamines) in addition to using alcohol was defined as polydrug use. The sample included 4,668 (54%) females and 3,977 (46%) males. Half of the sample was between seventh and ninth grade with a median age of 15 years old. The prevalence of polydrug use in the public and private schools participating in the study was 9.4% and the suicide attempts was 7.6%. Results: Multiple logistics regression analyses revealed that students who use multiple substances during the last year were significantly more likely to report suicide attempts after controlling for depression symptoms and other sociodemographic variables (OR=3.07; 95%CI: 2.53-3.72). Adolescents who used three or more substances (95%CI=7.00-10.84) were 8.7 times more likely to attempt suicide than those who did not use drugs. Conclusions: Findings of this study suggest that adolescents who use multiple substances seem to be at higher risk for suicide behaviors. Understanding who is most likely to report polydrug use is important in developing interventions to prevent suicidal attempts. Acknowledgements: Research supported by the Puerto Rico Mental Health Services and Drug Addiction Administration (ASSMCA, by its acronym in Spanish)

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Type I interferon signaling contributes to MC903-induced atopic dermatitis

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Background & Objectives: Atopic dermatitis (AD) is a chronic, relapsing Th-2 inflammatory skin disease with several new targets including interleukin (IL-)4 and IL-13 and JAK-STAT signaling contributing to disease pathogenesis. A better understanding of the molecular pathogenesis is needed to develop improved therapeutics. Type I interferons (IFNs) are a family of cytokines that signal through the type I IFN -/- receptor (Ifnar) that contributes to early immune activation in infections, cancer, and inflammatory diseases, but its role in the pathogenesis of AD has not been fully elucidated. We hypothesized that loss of type I IFN signaling would result in attenuated inflammatory disease in the MC903-atopic dermatitis like skin model. To test this hypothesis, we used a mouse model where topical application of the vitamin D3 analog, MC903, results in an AD-like skin dermatitis in wildtype (WT) mice and mice deficient in the type I IFN receptor, Ifnar-/- mice. Methods: Topical MC903 was applied on the left ear of WT and Ifnar-/- mice for 9 days. Clinical observations, ear thickness measurements, and histologic evaluations were performed to assess the severity of the lesions. Results: The ears of Ifnar-/- mice showed reduced clinical disease, including erythema, scaling and ear thickness compared to WT mice. Histologic evaluation confirmed the decreased ear thickening, scaling, and dermal edema in Ifnar-/- mice compared to WT mice. Conclusions: Our results suggest that type I IFN signaling participates in the clinical manifestations and pathogenesis of MC903-induced AD. Future studies will be conducted to determine the cellular and molecular mechanisms by which type I IFN contributes to clinical disease in AD. Acknowledgements: This research was supported by NIH R01-AR079470-02 awarded to Scumpia.

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Participación de la juventud en organización comunitaria y su bienestar físico y mental

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Trasfondo: La población infantil y adolescente enfrenta retos y experiencias diferentes a los de la población adulta. Por ello, es esencial promover su participación en intervenciones comunitarias, y su bienestar físico y mental. Para lograr esto, desarrollamos el proyecto Activando la Montaña en la comunidad El Rucio de Peñuelas. Métodos: Los participantes fueron 25 niños y adolescentes entre las edades de cuatro a 17, miembros de Aula en la Montaña; un programa que busca disminuir el rezago en el aprendizaje. Añadimos los componentes de bienestar físico, salud mental y formación en promotoría de salud y liderazgo. Se ofrecieron clínicas deportivas, se proveyó equipo para actividad física de uso grupal e individual, también se entregó un rastreador de actividad física a cada participante. Para el desarrollo de promotores de salud comunitaria, el equipo de enlace comunitario ofreció talleres de participación ciudadana, liderazgo y promoción de la salud. El componente de salud mental incluyó pruebas psicológicas, actividades para regulación de emociones, fortalecimiento de confianza, trabajo en equipo y empatía. Resultados: Activando la Montaña se convirtió en un proyecto participativo, donde la niñez tomó las decisiones de las actividades según sus intereses y los de la comunidad. Para mejorar la calidad de la alimentación colaboramos con COSSAO donde se entregaron cuatro rondas de cajas de frutas y vegetales, y tuvimos dos talleres de cocina. Visitamos Finca Plenitud para aprender sobre proyectos comunitarios. Como estas, muchas otras actividades surgieron de las necesidades expresadas por la niñez. Conclusiones: Es imprescindible que los jóvenes participen y se involucren en proyectos comunitarios para comprender las dinámicas, debilidades y fortalezas de su comunidad, desarrollar pertenencia y entender la importancia de sus opiniones en lograr cambios. A corto plazo hemos podido observar el impacto en el comportamiento de los participantes hacia un futuro más saludable.

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Disparate Treatment of Puerto Rico Residents with Disabilities in Federal Programs and Benefits

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Background and Objectives: Puerto Rico has a growing population of people with disabilities (22 percent, 2021). On May 23, 2019, the National Council on Disability held a public meeting in PR. More than 150 Puerto Ricans with disabilities discussed the concerns they face in accessing quality services in the island. Consequently, the purpose of this study was to explore health disparities among federal programs in Puerto Rico as compared to Unites states. The Social Model of Disability was used as a theorical framework. Methods: The study design was qualitative. Data collection was through in-depth interviews with 10 key informants from PR agencies and organizations, 7 persons with disabilities and persons with children with disabilities. People with disabilities and their families were recruited from the Movement for the Outreach of Independent Living, the Puerto Rico Family-to-Family Services and Child Development Center. The interview period began on December 1, 2020 and ended on February 28, 2021. The researching team designed an interview guide and a short demographic validated by experts. Recruitment was by a letter of invitation and by availability. All participant rights and information were safeguarded. The data analysis used a thematic content method and triangulation of data. Approved by IRB-Protocol B1840420. Results: As results, the main themes included: (1) Financial burden on families (2) Impact of Jones Act on health costs in Puerto Rico (3) Limitations in healthcare due to lacking SSI Benefits (3) Need of SSI benefits for people with disabilities in Puerto Rico (4) Need of transportation accessibility (5) Limitations in healthcare services due to lack of long-term care services. Conclusions: The data analysis suggested that people with disabilities confronted barriers related to health services accessibility, long term

services and cost of medical equipment. Our results supported the needs to consider public policy actions in federal programs.

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Extinction of morphine place preference and BDNF expression in the mesolimbic reward system of male and female rats

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BDNF expression in the mesolimbic reward system in the extinction of morphine place preference Background and Objectives: Opioid addiction is the leading cause of overdose in the United States, resulting in over 100,000 deaths in 2021 (CDC, 2021-22). Studies suggest that substance use disorders (SUD) are cognitive disorders of chronic relapse, caused by aberrant learning patterns that induce neuroplasticity changes in the circuits of the corticomesolimbic dopaminergic system, resulting in persistent drug-seeking. This study will determine the expression of brain derived neurotrophic factor (BDNF) in regions of the reward system (MLDA) in male and female rats after extinction of morphine place preference. Methods: Sprague Dawley male and female rats were subjected to a conditioned placed preference paradigm (CPP) for morphine (5kg/mg) during four alternate days, followed by a four-day forced extinction protocol. Rearings and side changes were quantified as a measure of withdrawal-induced anxiety. BDNF expression in the ML-DA was then quantified via Western Blots. Results: Both sexes showed similar morphine conditioning patterns. For the extinction of morphine CPP, two groups were observed; the extinction and extinction resistant. Rears and side-changes significantly decreased in extinction trained males, compared to the sham group. Similarly, females showed a non-significant decrease of symptoms in animals that received training; however, baseline data shows significantly less symptoms compared to males. Hippocampal BDNF expression was significantly increased in males of the extinction group ($p<0.005$), and preliminarily in females. In contrast, BDNF expression was increased within the amygdala (AMY) of males ($p<0.005$) in both the extinction and extinction-resistant groups. Preliminary data shows a similar trend in females. Conclusion: Increased BNDF expression in the AMY might be responsible for contextual learning during extinction training, although expression in the HPC might play a key role in the successful extinction of opioid seeking behavior. Females extinguish with less frequency than males despite their reduced withdrawal like symptoms, suggesting that these biological triggers do not increase their likeability of relapse. Acknowledgement: Supported by: MBRS-SCORE-1SC2DA047809, NIGMS-RISER25GM061838 and NeuroID.

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Diagnóstico de linfoma de Burkitt pancreático en Puerto Rico: Estudio de caso de hombre de 68 años.

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Propósito: Un tipo de linfoma que es muy raro encontrar como cáncer primario en el páncreas es el linfoma de Burkitt; con muy pocos casos reportados a nivel mundial. En Puerto Rico los linfomas no-Hodgkin se encuentran entre las primeras diez causas de mortalidad por cáncer en hombres. El objetivo de este estudio de caso fue analizar los hallazgos citológicos de una masa en la cabeza del páncreas, correlacionarlos con los resultados obtenidos de las pruebas auxiliares y el historial clínico del paciente. Descripción del caso: Este estudio de caso consiste

en un hombre de 68 años que presentó ictericia debido a una masa en la cabeza del páncreas. De esta masa se obtuvo una muestra mediante la técnica de biopsia por aspiración de aguja fina, para su análisis patológico. Los hallazgos citológicos mostraron la presencia de un infiltrado de linfocitos atípicos. Se observa nucleomegalia, nucleolos prominentes, y figuras mitóticas. Para determinar el tipo de linfoma se llevaron a cabo pruebas auxiliares. Se obtuvieron resultados positivos para los marcadores CD10, BCL-6, CD20, MYC, Ki-67 y BCL-2. Se obtuvo un resultado positivo para la fusión IGH-MYC (8;14) y negativo para la fusión BCL-2 (14;18). Conclusión: Las características citológicas atípicas en conjunto con los resultados de las pruebas auxiliares favorecen el diagnóstico de un linfoma de Burkitt. El resultado positivo para la fusión IGH-MYC (8;14) característico de linfoma de Burkitt y negativo para la fusión BCL-2 (14;18) fue necesario para confirmar el diagnóstico. Este estudio de caso representa gran valor para la comunidad médica. Establece la importancia de incluir los linfomas como parte de los diagnósticos diferenciales al evaluar un tumor pancreático; particularmente los de alto grado como el linfoma de Burkitt, que podrían confundirse con otros tumores pobremente diferenciados. Esto es importante para poder brindar el tratamiento correcto al paciente.

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Impacto de la pandemia del COVID-19 en la salud y vida familiar en comunidades rurales de Puerto Rico.

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Trasfondo y Objetivos: En el primer año de la pandemia del COVID-19, se observó un incremento de 25% en la prevalencia mundial de ansiedad y depresión. El aislamiento social, como resultado de la pandemia, causó otros problemas de salud mental como el estrés, temor, soledad, entre otros. Los accesos a servicios de salud mental se vieron limitados y los países tuvieron que incluir estrategias de apoyo de salud mental en sus planes de respuesta. Habiendo actualmente muchas necesidades psicológicas por atender, el objetivo del estudio es identificar el efecto que tuvo la pandemia en la salud y vida familiar de comunidades rurales en Puerto Rico. Método: Se utilizó un diseño de métodos mixtos para explorar las experiencias de los participantes con respecto a la pandemia del COVID-19. Con una muestra de 100 participantes, se administró una encuesta desde mayo a junio de 2022 en comunidades de Maricao, Castañer, Jayuya y Adjuntas. Los criterios de elegibilidad incluyeron el ser mayor de 21 años, residir en Puerto Rico y poder comunicarse en el idioma español. Resultados: Participaron 100 personas con una media de edad de 48.19. El 76 % de la muestra se identificó como mujer, mientras que el 24 % de la muestra se identificó como hombre. Los hallazgos más prevalentes con respecto al efecto de la pandemia del COVID-19 en la salud fueron el aislamiento social, ansiedad, estrés, temor, seguridad, actividades sociales, relaciones interpersonales, y comunicación. Conclusión: El aislamiento social y la interrupción en las relaciones interpersonales son algunos de los muchos factores que influyeron en la salud mental de las familias y comunidades puertorriqueñas. La capacidad de autocuidado, el bienestar físico y emocional se observaron negativamente afectados. El evaluar estos aspectos permite hacer recomendaciones basadas en evidencia sobre estrategias para atender dichas necesidades de salud. Agradecimientos: Esta investigación fue apoyada por una subvención otorgada por los Institutos Nacionales de la Salud de La Alianza de Participación Comunitaria contra las Disparidades del COVID-19 de Puerto Rico (PR-CEAL, OT2HL161827) y La Alianza Hispana para la Investigación Clínica y Traslacional (La Alianza) con el apoyo de los Institutos Nacionales de Salud del Instituto Nacional de Ciencias Médicas Generales

(NIGMS- U54GM133807). Protocolo aprobado por el IRB del Recinto de Ciencias Médicas (A7080121).

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Salud Respiratoria en residentes de la comunidad Miramar en Guayama, Puerto Rico: Preocupación, Prevalencia y Próximos pasos

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Trasfondo y Objetivos: Estudios demuestran que altas concentraciones de material particulado (MP) pueden ser tóxicas para la población aun en niveles bajos. Un estudio de 2021 reportó a Guayama como el lugar reportado con más alto nivel de toxicidad en muestras de MP. Diariamente la comunidad de Miramar en Guayama se enfrenta a concentraciones de MP de fuentes antropogénicas incluyendo emisiones de la planta generadora de energía AES. La meta del proyecto de investigación fue desarrollar un perfil de salud. Nuestro objetivo es determinar la prevalencia de enfermedades respiratorias en el área de estudio. Métodos: El proyecto se realizó entre agosto y diciembre de 2022. Se encuestó 80 hogares localizados en Miramar utilizando la aplicación Kooltoolbox. La encuesta incluyó preguntas sobre enfermedades respiratorias crónicas y agudas, sus datos demográficos, tiempo residiendo en vivienda, entre otras. Se utilizó Excel para el análisis de los datos recopilados. Resultados: Se recibió información de 175 residentes. El 25% de la población fue diagnosticada con alguna enfermedad respiratoria en el periodo de 2005 al 2022. Se registró un total de 43 enfermedades respiratorias. Las enfermedades más prevalentes fueron asma y sinusitis. Conclusión: Este es el estudio más actualizado sobre la salud respiratoria de la comunidad de Miramar en Guayama, Puerto Rico. La salud de poblaciones vulnerables puede verse afectada aún con los niveles seguros establecidos por las agencias reguladoras. Para comprender en detalle la relación que existe entre la contaminación atmosférica y la salud de los residentes en Guayama se deben realizar estudios de salud ambiental que incluyan la caracterización del MP. Agradecimientos: Agradecemos a los lideres comunitarios de las comunidades de Miramar y Santa Ana, y a la organización Comunidad Guayamesa Unidos por la Salud. Esta investigación fue subvencionada por Puerto Rico Louis Stokes Alliance for Minority Participation.

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Evaluating the Impact of the Covid-19 Pandemic on Families of Children and Youth from 0 to 21 Years of Age with Suspected or Diagnosed Developmental Disabilities

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Background and Objectives: On March 2020, the World Health Organization (WHO) declared Covid-19 a Pandemic. By August 2021, Covid-19 cases declined, and the government ordered the Department of Education to reopen the classrooms and provide childcare services. Therefore, there is a need to study the impact of the Covid-19 pandemic and the reintegration process of educational and day care services offered to children with disabilities. The objectives were: 1) To explore the changes that families with children from 0 to 21 years of age with developmental disabilities have experienced when facing the Covid-19 pandemic 2) To determine the needs that families with children with developmental disabilities have experienced during the Covid-19 pandemic 3) To establish strategies to offer appropriate services to the needs of families with children with developmental disabilities. Methods: This study has a transversal design. The recruitment period was from January 1, 2021, through March 31, 2022. Families participating in the Puerto Rico Family to Family Center received via email an invitation letter. The recruitment was by availability. The rights of all

participants were safeguarded. Every family provided consent before starting the collection of data using a semi-structured questionnaire through a telephone interview administered by trained researchers (IRB approval). Results: The sample consisted of 18 parents or caregivers. The primary needs reported by families were emotional support (50%) and clinical therapies (50%). About 46% of families qualified reintegration process in school and childcare as excellent, 16% as good, 23% as regular and 15% as poor. Conclusions: This study reinforces the pandemic's impact and the importance of providing training about the safe school and childcare reintegration of children among other activities.

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Treatment Fidelity and Reliability of Fidelity Scores when Delivering Cognitive-Behavior Therapy for Depression with Type 1 Diabetes Adolescents

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Background/Objectives: Treatment fidelity (TF) describes the degree to which interventions are delivered as intended. It is a condition for the valid assessment of psychotherapy efficacy. Adolescents with Type 1 Diabetes (T1D) and depression need feasible psychosocial interventions that could be delivered with high fidelity levels. Methods: Participants were 51 T1D adolescents (aged 12-17 years), randomly assigned to either standard Cognitive-Behavioral Therapy (CBT) for Depression (n=25) or CBT for Depression adapted for adolescents with diabetes (CBT-DM; n=26). Both manualized interventions had 14 sessions delivered in group format during a pilot efficacy trial (IRB approval #1112-005). Youth must obtain a Children's Depression Inventory score ≥13 or a Children's Depression Rating Scale-Revised score ≥44. Exclusion criteria included imminent suicide risk, legal involvement, current depression treatment, current child maltreatment/abuse, history of psychotic/bipolar disorder, and past-year substance abuse/dependence. Two clinical psychology graduate students per study arm delivered interventions in groups of 5–6 adolescents, during five therapy cycles. Sessions were digitally recorded. Trained psychology students assessed TF observing recordings and completing the fidelity forms available for each manual. Each session was assessed by different evaluators. An overall TF score (%) was computed by averaging scores across evaluators. We also computed TF scores for each intervention, thematic module, and therapy cycle. We used the intraclass correlation coefficient (ICC) with a two-way mixed model (absolute agreement definition) to assess the inter-rater reliability of TF scores. Results: Overall TF was 92.73% for all (140) sessions, 96.77% for CBT-DM (70), and 88.73% for standard CBT (70). Global TF for modules were 94.18% (Thoughts), 93.39% (Activities), and 89.44% (People). Overall ICC was .91, with values of .88 for each intervention ($p<.001$). Conclusion: Both treatments were delivered with high and reliable fidelity scores, complying with an important condition for the validity of efficacy assessments of these CBT interventions with T1D adolescents. Acknowledgements: This study was funded by the NIDDK (R03DK092547). The authors have no conflict of interest to disclose.

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Diseño e implementación de un proyecto piloto para orientar a jóvenes en temas de salud sexual y reproductiva a través de un sistema de mensajería directa (DMs)

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Trasfondo y objetivos: En abril de 2021 el Proyecto PROSa (Puerto Rico en Óptima Salud) lanzó @

adoles.ciencia; una plataforma en Facebook e Instagram, cuyo objetivo es educar a jóvenes entre 13 y 20 años sobre temas de salud sexual. Hasta la fecha, se han publicado 285 'posts' educativos con un alcance promedio de 60,000 personas. Sin embargo, a pesar de tener un alcance alto, la interacción con las publicaciones era baja ya que no se recibían comentarios o preguntas de los jóvenes. Nos preguntamos: ¿Qué tal si existiera en Puerto Rico una plataforma en la que los jóvenes puedan hacer preguntas sobre salud sexual y que fueran respondidas al momento por un equipo de profesionales? Método: Se diseñó una campaña en redes sociales para alentar a los jóvenes a enviar sus preguntas vía mensaje privado, a través @adoles.ciencia. Se conformó un equipo de 5 profesionales de salud pública, salud mental y salud sexual para responder las preguntas. Se identificaron 4 organizaciones aliadas para referir a los jóvenes, en caso de ser necesario. A partir de la experiencia, se diseño un SOP ('Standard Operating Procedure') para manejar esta plataforma de consultas directas. Resultados: Al momento, se han atendido 60 consultas de jóvenes, con un tiempo de respuesta promedio de 24 horas. Se llevó a cabo un análisis de contenido de dichas preguntas y los temas se distribuyen de la siguiente manera: (1) prevención de embarazos; (2)prevención de ITS y; (3)orientación sexual. Conclusión: Esta experiencia sienta las bases para expandir esta plataforma y que @adoles.ciencia se convierta en la primera línea directa de consultas sobre sexualidad para jóvenes en Puerto Rico, regida por los siguientes principios: basada en ciencia, respuestas empáticas y sin juicio, humildad y competencia cultural. Reconocimientos: Este proyecto es apoyado por la subvención federal TP1AH000244 (IRB # 19-028447PR). Reconocemos y agradecemos la labor del Equipo de Respuesta de Mensajería Directa para Consultas de Salud Sexual y Reproductiva del Proyecto PROSa (Puerto Rico en Optima Salud) y de las organizaciones PR CONCRA, Centro Ararat, Pro-Familias, Clínica iElla y Aspira de PR quienes siempre están disponibles para responder preguntas técnicas sobre pruebas de ITS, terminación de embarazos y/o servicios generales que ofrecen.

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Pleural Effusion And Bacterial Infection In The Presence Of Sars-Cov2 Infection In A Pediatric Patient.

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Purpose: There is limited data regarding the incidence of co-infections in pediatric COVID-19. Respiratory viruses, such as influenza, are known to result in secondary bacterial pneumonia. Community-acquired pneumonia (CAP) is one of the most common infections in pediatric patients and approximately half require hospitalization. CAP is commonly caused by viruses and Strep pneumoniae; MRSA is a known etiologic agent for CAP presenting with empyema. Risk factors to develop pneumonia and increased severity: congenital heart disease, cystic fibrosis, bronchopulmonary dysplasia, neuromuscular disorders, and immunodeficiency. Literature review revealed that respiratory bacterial infections in pediatric patients with COVID-19 are rare and few require hospitalization. Case Description: A 2 y/o male patient with no known systemic illness, incomplete immunizations presented to the ED at our institution due to abdominal pain since 3 days prior to admission. Upon evaluation, an abdominal CT scan revealed a left pleural effusion and patient had a positive SARS-CoV2 test. Patient was admitted to receive Remdesivir and Steroids. During the clinical course, he developed fever, episodes of desaturation, and imaging revealed a worsening left pleural effusion. The patient was started on vancomycin and ceftriaxone, transferred to the Intensive Care Unit for management and a left chest tube was placed. Pleural fluid culture was positive for MRSA, for which the patient completed a total of 14 days of IV Clindamycin. Conclusion: Our patient had Staphylococcus pneumonia and para-pneumonic effusion in the presence of SARS-CoV2 infection. Literature review suggests a low incidence of bacterial co-infection. The most common causes described are Pseudomonas aeruginosa, E. coli, Klebsiella, and S. aureus. This case demonstrates

the variability of clinical presentations. A detailed diagnostic approach can lead to identification of a curable disease with a positive impact on the survival of the patient. It highlights the importance of a multidisciplinary team approach during evaluation and management. Acknowledgments: Both Co-Authors and Mentors have read and approved the abstract: Co-author: Yasmin Pedrogo-Rodriguez, MD, FAAP, MSc MEdL1; Co-author: Ricardo Garcia, MD, FAAP, FCCM, FCCP, MD1

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Prevalence of orthodontic treatments in Puerto Rican children with oral malformations.

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Background & Objective: Oral cleft (CL/P) is an increasing public health issue that can be identified on physical examination with consequences in facial aesthetic, masticatory function, and others. Multidisciplinary treatments are required to correct CL/P such as orthodontic treatments (OTs). Study's aim was to identify the prevalence of OTs in children with oral malformations. Methods: Data were collected from an examination (n=144, 84 cases and 60 controls) performed in an ongoing case-control study of families with children aged 0-18 years. Data on orthodontics appliances were identified and analyzed along with status (cases vs controls), cleft type and sex variables. STATA version 14 was used to calculate frequencies and percentages of each variable, and statistical tests such as Fisher's Chi-square to identify differences between cases and controls. Results: Participants with a mean age of 6.4 years + 5.0 years were examined and cases (n=84) presented CL/P: cleft lip (12.6%), cleft palate (12.6%), and cleft lip with palate (33.6%). OTs were identified in 63.2% of the children, in which cases (45.2%), males (39.4%), and cleft lip with cleft palate (54.2%) type were most reported. Differences for OTs by status (p=0.01) and cleft type (p=0.02) were found. Among the past OTs reported were braces upper arch (9.0%), expander appliance (5.6%) and braces lower arch (3.5%). OTs identified at the examination were braces upper arch (16.0%) and lower arch (8.3%), and expander appliance (5.6%). Differences were found for current OTs by status for braces in upper arch (p=0.03). Conclusion: Differences were found for cleft type and current braces. OTs in upper arch refine feeding, speech and surgical outcomes to further improve prognosis for children with CL/P. Data about its use, length, age, and outcomes of prevalent OTs should be collected to identify patterns in the planning and orthodontics treatment management in Puerto Rican population. Acknowledgments: This research was supported by NIH/NIDCR R00DE024571 and NIH/NIGMS U54GM133807

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Exploring the role of anxiety disorders in toxic stress: baseline profile of Semilla participants

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Background & Objectives: Children living in conditions of poverty are at a higher risk of suffering from toxic stress and associated comorbidities. Semilla is a STEM+M program that targets mental health literacy and resiliency by promoting the adoption of stress-management strategies. Program implementation is performed at three locations of the Boys & Girls Club of P.R. engaging children ages 9 to 12 years old. Semilla's curriculum has 3 fields of focus: 1) awareness on the body's reaction to stress, 2) building skills on adaptive responses to stressors through mindfulness, and 3) a whole body health curriculum intended to encourage health self-agency. We hypothesize that prolonged exposure to stress leads to a higher rate of positive screens for anxiety disorders. Our goal is to explore the findings of the anxiety screen performed at baseline among program participants. Methods: The Screen for Child Anxiety Related Emotional Disorder questionnaire (SCARED) was used to evaluate symptoms related to anxiety disorders. SCARED consists of 41 items

divided into the following anxiety disorders: panic disorder, generalized anxiety, separation anxiety, social anxiety, and school avoidance. Results: Aggregated results of 38 participants to date revealed that 21 scored above 25, suggestive of anxiety disorder symptoms at baseline. Within that group, 15 qualified for panic disorder or significant somatic symptoms (PN > 7), 12 for generalized anxiety disorder (GD > 9), 21 for separation anxiety disorder (SP > 5), 12 for social anxiety disorder (SC > 8), and 11 for school avoidance disorder (SH > 3). Conclusion: 1:2 of the participants were at risk of suffering from an anxiety disorder, and separation anxiety disorder was the most common. These results provide directions for further instruction when dealing with at risk populations to foster better approaches to mental health communication and coping behaviors. Acknowledgments: Grant number NIGMS - SEPA Program 1R25GM137368-01A1. No conflict of interest to disclose.

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Case of a Rare Verrucous Venous Malformation Presentation in a Pediatric Patient.

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Purpose: Verrucous Venous Malformation a rare vascular malformation stemming from capillaries and veins in the dermis and subcutaneous tissue. This lesion commonly presents at birth or early in infancy, mainly affecting the lower extremities. It can have an indolent course, initially presenting as a red-brown macule and usually developing overtime, growing as patients age. It evolves into a more wart-like, hyperkeratotic form. Recent research shows that Sirolimus antiproliferative and antiangiogenic properties decrease the size and appearance of the lesions and may improve limb function. Case description: 12 y/o male presented to our institution after a 3 month-long progressive growth of a left posterior calf lesion associated with pain, tenderness, bleeding, and foul-smelling discharge. History was pertinent for developing a left calf lesion during infancy. At 5y/o a biopsy reported it as a hemangioma. He had never received treatment and was asymptomatic until 3 months before. Physical exam was remarkable for a protruding, verrucous, dark-violaceous lesion with irregular hyperkeratotic borders, slightly raised with surrounding erythema and exquisite tenderness to touch. An MRA study revealed subcutaneous based serpiginous structure, as seen in venous malformations. Dermatology service clinical diagnosis was of Verrucous Venous Malformation (VVM). Surgical excision was deferred to avoid significant cosmetic and functional sequel, leaving a large defect in the gastrocnemius muscle. Sirolimus (Rapamycin) therapy was started, a total dose of 1.6 mg/m2 per day, divided into 2 doses per day. Baseline investigations prior to therapy including complete blood count, liver and hepatitis panel were normal. The patient has had excellent Sirolimus tolerance and clinical response. Conclusion: In VVM, surgical excision can be the first approach, but medical treatment can allow better cosmetic and functional sequel. The uncertainty of symptoms should raise awareness that a detailed approach and multidisciplinary team are needed for a complete diagnosis workup and management. Acknowledgments: Thank you to our co-authors and mentor. Our co-author Dra. Enid Rivera Jimenez has read and approved the abstract. Co-author: Enid Rivera-Jimenez, MD

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A curious case of a 19 y/o female with altered mental status

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Autoimmune encephalitis comprises a group of disorders in which the host immune system targets self-antigens expressed in the central nervous system. N-methyl-D-aspartate receptor (NMDAR)-antibody encephalitis is an autoantibody-mediated disease that typically presents with psychiatric features before progressing to seizures, a complex movement disorder, autonomic dysfunction, and hypoventilation. Two identified triggers are an

underlying ovarian teratoma and herpes simplex virus encephalitis. NMDAR-antibody encephalitis typically emerges over days to weeks, rather than the months and years in most serious mental illnesses. Paraneoplastic neurological syndromes (PNSs) are a heterogeneous group of immune-mediated diseases related to cancer that are not directly caused by the tumor; instead, an immune reaction initiated within the tumors subsequently leads to neuronal destruction or functional blockade. Case Presentation: 19 y/o F with past medical history of Allergic Rhinitis who presented with behavioral changes that included hypersexuality, disorganized and slurred speech, flight of ideas, and inappropriate laughing. Intracranial pathologies were excluded, and the patient was transferred to a psychiatric hospital where she became catatonic after starting antipsychotics. Focal seizures were noticed, and the patient was transferred to our Institution. The hospital course was complicated by refractory focal seizures that required mechanical ventilation for airway protection. Studies: Lumbar puncture showed mild elevation of opening pressure and mild pleocytosis with mononuclear predominance and elevated RBCs. Right adnexal structure measuring 3.2 x 2.9 by 3.1 cm, with internal fat density component and internal calcification, consistent with a mature teratoma of the right ovary. Positive anti-NMDA receptor antibody in CSF. Treatment: Surgical removal of ovarian teratoma. Immunotherapy: High dose steroids. Conclusion: Paraneoplastic Encephalitis can be difficult to identify as constellation of symptoms can be easily misdiagnosed. Development of a clinical approach to triage patients with new onset mental illness for NMDAR-antibody encephalitis is required.

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The case of a pregnant patient with a type III BTAI and 4.5 mm external iliac artery diameter: a novel surgical modification

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We present the case report of a potentially life-saving novel surgical modification performed on an anatomically limited 20 year old pregnant patient with a type III blunt thoracic aortic injury. The patient was asymptomatic, but presented clinical findings of a contained aortic rupture, including a mediastinal hematoma and an abnormal non-tubular contour of the descending thoracic aorta after suffering a motor vehicle accident. We performed a modified thoracic endovascular aortic repair (TEVAR) using a transabdominal aortic approach for endograft deployment, since the diameter of the common and external iliac arteries were 5.19mm and 4.53mm, respectively. We also ordered serial quantitative b-HCG tests for monitoring, which eventually resulted in a non-pregnant value. Given this, computed tomographic angiography was ordered on postoperative day three, confirming graft patency without the appreciation of endoleaks. Given the importance, radiation and iodinated contrast use in pregnancy within a trauma setting as well as the benefit of a multidisciplinary approach is discussed in our case report. Additionally, a non-pregnant b-HCG quantitative test result should be confirmed, since laboratory errors cannot be excluded. Most importantly, postoperative endograft follow up should be postponed until after birth in patients with a viable pregnancy. We hope that our case report creates confidence and motivation in other surgeons to avoid the higher risks of open aortic repair in anatomically limited patients.

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Ischemic Stroke in a Pediatric Patient, an Elusive Diagnosis

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Purpose: Discuss the etiologies of ischemic infarcts in pediatric population. Emphasize the importance of rapid recognition for early diagnosis and treatment. Case description: Case of a 17-year-old male, without prior history of systemic illness, who was in his usual state of health until 2 days prior to admission when he awoke at 5am with left eye pain described as stabbing, 10/10 intensity, non-radiating, with erythema and pupillary constriction. The patient also

referred dizziness (sensation of the room spinning), numbness, blurry vision, and tingling of his right hemibody from the level of the tongue downward. Denied nausea, vomiting, chest pain, shortness of breath, or loss of consciousness. He was taken to 3 different hospitals and initial head CT scan was negative for intracranial pathologies. Symptoms progressed to left-sided weakness. Eventually repeat head CT showed a left cerebellar lesion concerning for stroke, reason for transferring to our institution for evaluation by Child Neurology service. At our institution ischemic stroke was diagnosed with MRA study, however patient was no longer a candidate for thrombolytic therapy and no neurologic deficits were noted on physical exam. Patient was started on aspirin and statin regimen. Thrombophilia panel was ordered and came back negative, main cardiac and metabolic causes were excluded, and since he remained without signs of neurologic deterioration he was discharged with follow up with multiple subspecialties including Pediatric Hematology, Pediatric Neurology, and Pediatric Vascular Neurology. Conclusion: Rapid recognition of ischemic stroke signs is crucial for early diagnosis and treatment which has been associated to better outcomes. However this process can be delayed in children due to lack of consideration of the diagnosis or lack of access to MRI. Acknowledgements: We have no conflicts of interest to disclose.

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New-onset Mania in Multiple Sclerosis: A Case Report

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Purpose: The association between multiple sclerosis (MS) and psychiatric illness is of importance for understanding both conditions and their relationship. Various etiological hypotheses have been proposed to explain the link between MS and psychiatric disorders such as psychosocial factors, neurobiological influences, genetic predispositions and structural brain lesions (Silveira, 2019). An association between brain MRI findings and behavioral symptoms in patients with MS may alter management and prognosis. Case description: A 49-year-old male with history of MS, major depressive disorder, and post-traumatic stress disorder who presented to the psychiatry emergency department due to agitation and erratic behavior. History and mental status exam remarkable for labile mood, inflated self-esteem, increased energy, decreased sleep, racing thoughts, pressured speech, distractibility, and involvement in high-risk behaviors for 2 months. Patient smokes marijuana almost daily, cigarettes, and alcohol. Family history of unspecified bipolar disorder and MS. Physical examination showed chronic right arm and leg hemiparesis. Labs were unremarkable. Brain MRI with/without contrast compared to fourteen months prior showed a new enhancing lesion in the right temporal lobe suggesting an active demyelinating plaque. On admission, Olanzapine was started and optimized and neurology recommended continuing maintenance treatment with Fingolimod. Upon discharge, manic symptoms improved significantly. Three months following discharge, patient presented to his outpatient psychiatrist due to depressive symptomatology. He was changed to Sertraline and Quetiapine. Follow up Brain MRI showed resolution of the right temporal enhancement seen or prior study. Conclusion: These findings concur with a multifactorial explanation for the patient's behavioral dysfunction. They also suggest that structural brain lesions may be linked to the manifestation of psychiatric disease in patients with MS. This case report emphasizes the importance of brain MRI with contrast in all MS patients presenting with new symptoms. Nonetheless, further investigation is required in order to clarify the relationship between MS brain lesions and psychiatric disorders. Acknowledgements: The authors declare that there is no conflict of interests regarding the publication of this paper. Patient consent was obtained. Reference: Silveira C, Guedes R, Maia D, Curral R, Coelho R. Neuropsychiatric

Symptoms of Multiple Sclerosis: State of the Art. Psychiatry Investig. 2019;16(12):877–888. doi:10.30773/pi.2019.0106

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Islandwide Researchers Training Needs and Preferences

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Background & Objectives: The Hispanic Alliance for Clinical & Translational Research (Alliance) in Puerto Rico is a collaboration between three (3) main healthcare academic institutions in PR, to support an island-wide clinical and translational research (CTR). To provide training and professional development activities that respond to the investigators needs, the Alliance conducted a needs assessment. Methods: The online anonymous assessment in REDCap explored training interests across CTR thematic areas and competencies developed by National Institutes of Health. Faculty and researchers affiliated to Alliance participating institutions were invited to participate. Data collection was from October 2022 to November 2022. A total 99 individuals completed the assessment. Descriptive analyses were made via SPSS. Results: Most surveyed were early stage (ESI, 50.0%) and 46.1% non-early stage (non-ESI). The amount of training areas/competencies identified were highest in ESI than non-ESI, 149 VS 234. Top areas identified ESIs were: Data analysis for research studies (71.0%), Data collection strategies and instruments design (63.1%) and Scientific communication (57.9%). For non-ESI, top areas were: Data analysis for research studies (48.6%), REDCap data collection platform (42.9%) and Data collection strategies and instruments design (34.3%). Preferences identified were the same by ESI and non-ESI. They both preferred short length trainings (less than 2hrs), that were in the morning (8am-11am) and in an interactive modality. Conclusion: There were similar needs and preferences identified by ESIs and non-ESIs groups. However, more needs were identified by ESI than non-ESI. This data could be used to developed targeted training interventions for these islandwide investigators. Acknowledgements: The Alliance is supported by NIGMS from NIH the Award Number U54GM133807

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Comienzo Saludable Puerto Rico: Eliminando Disparidades a través de las colaboraciones y las intervenciones con paternidades.

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Comienzo Saludable implementa un programa integral basado en la evidencia sobre salud materna e infantil, crianza positiva y educación para la salud para cuidadores y niños menores de 18 meses. CS se implementa en 8 municipios del centro y sur de Puerto Rico con alta tasa de mortalidad infantil, muertes infantiles y 11,224 nacimientos anualmente. Aunque los padres desempeñan un papel importante en la crianza de los hijos, rara vez toman un papel activo en el proceso de crianza de los hijos debido a conceptos culturalmente asumidos relacionados con las mejores habilidades de crianza de una madre. En los últimos años, ha habido una mayor visibilidad de la importancia de la paternidad, pero existen pocos programas que promuevan la crianza compartida y las habilidades de paternidad. CS ha logrado trabajar con los varones promoviendo su involucramiento en todas las etapas del embarazo y desarrollo de los bebés. Desde el 2019, CS ha trabajado con 133 padres (13.7% de sus participantes). En 2022 se ofrecieron un total de 103 servicios: 46% visitas al hogar, 32% completó participó de sesiones de EHP, 7% Fathering 15, 5% Fundamentos de crianza y 11% GGK. Estos servicios ayudaron a fomentar un involucramiento y apoyo del padre durante el embarazo y la etapa prenatal (93%). Durante el proceso el personal y los colaboradores hemos mejorado nuestras estrategias

de reclutamiento e involucramiento fortaleciendo nuestras habilidades de participación comunitaria y humildad cultural a través de capacitación, discusión de casos, alcance en las redes sociales, vinculación y maximización de recursos. Objetivos: #1. Discutir cómo la implementación de diversas estrategias para fortalecer nuestra participación comunitaria y la adecuación cultural han mejorado nuestras habilidades para reclutar e involucrar a los padres, especialmente a los participantes masculinos. #2. Demostrar cómo la colaboración ha permitido que el equipo y la red de CS ofrezcan visitas al hogar basadas en evidencia, educación para padres, educación para la salud, Doulas, salud mental y apoyo de padre / hombre. #3. Describiremos en detalle cómo se ha llevado a cabo la colaboración durante los últimos cuatro años y el impacto en los servicios ofrecidos a las familias.

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Cross-sectional association between food insecurity and depressive symptoms in young adults in Puerto Rico

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Background & Objectives: Research has shown associations between food insecurity and poor mental health outcomes in the general population. However, there is a dearth of studies addressing this association in young adults, an age group of increased psychological vulnerability and onset of mental health disorders. Given the documented elevated prevalence of food insecurity in 2015 in Puerto Rico (33.2%) and the population's disproportionate exposure to social and environmental stressors, this study examined the association between food insecurity and depressive symptoms in a sample of young adults in Puerto Rico. Methods: We used baseline data from PR-OUTLOOK, a cohort study of cardiovascular health of young adults (aged 18-29 years) living in Puerto Rico, collected between September 2020 and September 2022. Food insecurity was measured with the six-item US Department of Agriculture Household Food Security Scale (a score ≥2 indicates food insecurity). Depressive symptoms were measured with the 10-item Center for Epidemiological Studies Depression Scale (a score ≥10 suggests clinically significant depressive symptoms). Poisson regression models with robust error variance estimated prevalence ratios (PR) and 95% confidence intervals (CI) adjusting for age, sex, marital status, household size, vaping, and BMI. Results: The sample included 1,004 young adults (639 women and 365 men); 19.3% met the criteria for food insecurity, and 58.6% had elevated depressive symptoms. A greater proportion of young adults reporting food insecurity had elevated depressive symptoms than food-secure individuals (76.3% vs. 54.3%, p<0.001). In adjusted analyses, food-insecure adults had a significantly higher prevalence of elevated depressive symptoms than food-secure participants (PR=1.38, 95% CI=1.25, 1.53). Conclusion: Food insecurity was associated with depressive symptoms in this community sample of young adults. Public health interventions addressing food insecurity are needed to preserve the mental health of young adults in Puerto Rico. Acknowledgements: This work was supported by the National Heart, Lung, and Blood Institute (grant R01HL149119) and partially supported by the Hispanic Alliance for Clinical and Translational Research (NIGMS U54GM133807). The study was approved by the IRB (protocol #6050319).

4402

Psychological correlates of current vaping among young adults in Puerto Rico

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Background & Objectives: There is a paucity of research examining the frequency of current vaping and its psychological correlates among Puerto Rican

young adults, a population disproportionately exposed to social and environmental stressors. This study assessed the association between psychological factors and current vaping among young adults. Methods: This analysis used data from PR-OUTLOOK, a cohort study of cardiovascular health of Puerto Rican young adults aged 18-29 years. Participants (n=1,504, 64.1% females) were recruited and completed a baseline survey between September 2020 and September 2022. Participants were asked 'Have you ever vaped?'. Those with an affirmative response were subsequently asked how often they vaped during the last year. Participants who responded 'no' to the first question or 'not in the past year' to the second question were classified as non-vapers. Those who replied 'daily', 'several times a week', 'weekends only', or 'occasionally' were classified as current vapers. Symptoms of depression (CESD-10), anxiety (STAI-10), post-traumatic stress disorder (2-item PCL-C), and perceived stress (PSS-4) were also assessed. Scale scores were dichotomized according to clinical cut-offs. Adjusted prevalence ratios (PR) and their 95% confidence intervals (95% CI) were calculated using Poisson regression models with robust variance. Results: Overall, 40% of participants were classified as ever-vapers and 25% as current vapers. Nearly 60% of participants had elevated depression symptoms, 27.7% had elevated anxiety symptoms, 77.2% had elevated PTSD symptoms, and 64.8% had elevated perceived stress. In adjusted models, current vaping was significantly higher for those with elevated perceived stress (PR=1.31, 95% CI=1.08, 1.57) and PTSD symptoms (PR=1.42, 95% CI=1.12, 1.80) compared to non-vapers. Conclusion: Vaping was associated with elevated psychological symptoms. Future studies should examine the influence of psychological symptoms on young adults' efforts to quit vaping. Such data will be critical for informing public health efforts to reduce vaping among vulnerable young adults. Acknowledgement: This work was supported by the National Heart, Lung, and Blood Institute (grant R01HL149119) and partially supported by the Hispanic Alliance for Clinical and Translational Research (NIGMS U54GM133807). The study was approved by the UPR-MSC IRB (protocol number 6050319).

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El CRESCO: La Integración de la Mentoría, el Adiestramiento y la Tecnología para el Desarrollo de Competencias de Investigación Clínica Traslacional

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Trasfondo y Objetivos: El desarrollo de las competencias de investigación clínica traslacional (ICT) de los estudiantes y profesores de programas subgraduados del Recinto de Ciencias Médicas (RCM) y de otras instituciones de educación superior del país es el principal objetivo del Proyecto Título V RCM (2020-2025). Entre las estrategias implantadas para apoyar este objetivo, se encuentra la creación del Centro para Investigación, Empresarismo y Colaboraciones Científicas (CRESCO), un espacio físico y virtual en la biblioteca del RCM. Método: El CRESCO ofrece los siguientes recursos y servicios: acceso a bases de datos, e-books y plataformas de estadísticas y redacción científica (EMBASE, Intellectus Statistics, Mendeley, Grammarly, Writefull); talleres y tutoriales en línea sobre estadísticas, programados y bases de datos para la investigación; servicios de edición científica y asesoría estadística; salones equipados; un portal de servicios integrados, y apoyo técnico. Se recopilan estadísticas del uso de los servicios. Resultados: Desde el 2020 hasta diciembre de 2022: 3,289 usuarios han consultado la base de datos EMBASE y 368 han accedido a uno o más de los e-books adquiridos; se han facilitado 90 licencias de Intellectus Statistics; 3,167 estudiantes o profesores han visitado el portal de servicios para usar los tutoriales y/o recibir mentoría en estadísticas o en el uso de las plataformas y bases de datos en línea disponibles; 239 estudiantes o profesores

han participado en los talleres en línea ofrecidos sobre estadísticas, bases de datos y plataformas; y 13 profesores o estudiantes han recibido servicios de edición científica y consultoría estadística para completar proyectos de investigación. Conclusión: El modelo de servicios del CRESCO, que integra mentoría, adiestramiento y el uso de la tecnología digital, es un recurso valioso para apoyar el desarrollo de las competencias de ICT. Agradecimiento: Subvencionado por el Departamento de Educación Federal, Grant PO31S200104.

4404

Overuse Shoulder Occurrence in Young Athletes: Comparison of the Medical Literature and the Olympic Training Clinical Data

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Background & Objectives: The frequency of overuse injuries suffered by pediatric athletes has been steadily increasing over the last decades. The specialization in youth sports, which has become more common in recent years, has contributed to this by the added stress placed on the child's body during their training from a very young age. These overuse injuries can manifest in pain or stiffness of the shoulder for example, and if not treated properly, can progress to additional injuries. The sports of baseball, volleyball, and swimming particularly involve frequent overhead movements that place an additional stress on the shoulder joint. The purpose of this study is to observe the frequency of shoulder overuse injuries for pediatric athletes in these 3 sports seen at the Sports Medicine Clinic at the Albergue Olímpico in Puerto Rico, and analyze how this compares to other sports as well as national data. Methods: A retrospective chart review was done over a 6-year period from 2016-2022 to include pediatric patients with shoulder injuries from these particular sports. 5 research articles were also analyzed for the epidemiology of overuse shoulder injuries nationally. Results: 22 out of the 30 patients suffered an overuse injury in the shoulder (73%). The injuries to the other athletes were due to traumatic (20%) or undetermined causes (7%). The national data on these injuries correlates well with our findings, as overuse is the main cause of shoulder injury in high school baseball athletes consistently. Conclusions: Our data points to overuse injuries being significantly more prevalent than traumatic injuries in the shoulder for young athletes participating in baseball, volleyball, and swimming. Reducing risk factors and monitoring the athlete's workload more closely would be of great benefit to reduce overuse injury occurrence and its detrimental effects.

4405

Ocular and orbital adnexal involvement as the initial presentation of IgG4-Related Disease: A rare and challenging diagnosis.

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Purpose: IgG4-related disease is an uncommon immune-mediated inflammatory disease characterized by variable tissue and organ infiltration of IgG4 plasma cells. Predilection for head and neck tissues has been previously described with ophthalmic disease (IgG4-RoD) usually manifested with bilateral lacrimal gland enlargement and extraocular muscle inflammation without apparent visual impairment. Nevertheless, the diagnosis of IgG4-RoD is challenging as its clinical manifestations are extensive and mimic other diseases. Herein, we report a patient who presented with uveitis, and optic neuropathy with visual impairment as the initial presentation of IgG4-RoD. Case Description: A 60-year-old man with chronic sinusitis and 3-year-history of relapsing dacryoadenitis, presented due to 1-month-history of bilateral periorbital edema. He had left eye pain, blurred vision and photophobia.

Head and neck examination demonstrated bilateral periorbital swelling, left lacrimal gland enlargement and eye redness. Ophthalmologic exam disclosed left anterior uveitis and diminished visual acuity. Laboratory tests showed elevated total proteins. ESR, CRP, complement C3 and C4, angiotensin converting enzyme, rheumatoid factor, FTA, anti-CCP, antinuclear, anti-dsDNA, anti-Smith, anti-SSA, anti-SSB, and anti-RNP antibodies were normal. IgG4 in serum was elevated at 2104mg/dL. Magnetic resonance imaging of the brain/orbit showed bilateral exophthalmos with thickening and enhancement of the superior and inferior rectus muscle, left optic neuropathy and extensive paranasal sinus inflammation. Left maxillary sinus tissue biopsy demonstrated polyclonal plasma cell infiltrate with an elevated IgG4/IgG ratio. He was treated with prednisone 40mg daily. Within 3-months of treatment visual acuity improved and he had complete resolution of periorbital inflammation. Conclusion: The differential diagnosis in patients presenting with ocular and orbital adnexal involvement includes connective tissue diseases, infections, and malignancies. This case highlights the significance of considering IgG4-RoD. As presented in our case, awareness and accurate diagnosis by clinicians has significant implications in the prognosis and treatment of IgG4-RoD, thereby decreasing morbidity and mortality in these patients.

4406

From smoking hookah to the OR

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Deep neck space infections represent a rare but potentially life-threatening emergency if it is not detected and managed promptly. In this case, we present an 18-year-old previously healthy male with multiple deep neck soft tissue abscesses who developed complications despite appropriate initial management. Severe complications can be observed in 5-10% of infections, including airway compromise, descending mediastinitis, and septicemia. This patient developed the phenomenon known as a false recovery after IV antibiotics and surgical drainage presented clinical and imaging findings highly suggestive of descending mediastinitis. This adolescent patient developed multiple abscesses, including at the retropharyngeal space, most seen in younger patients, with an identifiable risk factor of smoking. Due to the anatomical localization of deep neck spaces, infections tend to spread rapidly to the mediastinum. The mortality rate of pediatric mediastinitis secondary to retropharyngeal infections is largely unknown. However, adult studies cite a 30-40% or higher mortality rate for all infectious causes of mediastinitis. Therefore, it is crucial to promptly diagnose a retropharyngeal abscess, manage it accordingly, and, most importantly, close monitoring for life-threatening complications.

4407

SARS-CoV-2 Transmission Risk Factors among Patients from a Metropolitan Community Health Center, Puerto Rico, July 2020 to November 2022

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Background and objectives: On July 2020, a private non-profit community health center (HealthProMed) that serves people without a medical insurance plan or with limited resources in one of the most populated areas in San Juan, Puerto Rico, implemented a COVID-19 case investigation and contact-tracing surveillance system. The main objective was to identify risk factors associated with SARS-CoV-2 transmission. Method: Nursing personnel at the health center completed a computerized case investigation form that was translated, adapted, and modified from CDC's Patient Under Investigation (PUI) Form. Results: Between July 13, 2020, and November 7, 2022, a total of 9,233 SARS-CoV-2 tests were conducted at the health center, 16.9% of which were classified as confirmed cases (positive molecular test) and 27.7% as probable cases (positive serologic test). Most of the confirmed cases were females (60.0%), under 20 years old (29.1%), and lived at their homes (59.1%). In the 14 days before onset of symptoms, 26.3% confirmed cases reported going to the supermarket,

22.4% had contact with a known COVID-19 case, and 20.7% went to work. The symptoms most reported were sore throat (33.4%), runny nose (33.3%), cough (24.9%), and headache (23.2%). The most common preexisting medical conditions among confirmed cases were hypertension (19.3%), chronic lung disease including asthma, emphysema, and COPD (13.3%), and diabetes mellitus (12.8). Multiple logistic regression analysis revealed that patients who use alcohol frequently during the last two weeks (OR=1.43; 95%CI: 1.15-1.77), those who were in contact with a positive case (OR=1.58; 95%CI: 1.33-1.88) and those who were obese (OR=1.82; 95%CI: 1.24-2.69) were significantly more likely to be a confirmed case after controlling for sociodemographic variables. Conclusion: Implementing a case investigation and contact-tracing component at community health centers can be of great value in the prevention and control of COVID-19 at the community level and for future outbreaks. Acknowledgements: Funded by HealthproMed.

4408

Catastrophic Antiphospholipid Syndrome and Diffuse Glomerulonephritis Induced by Adalimumab in a Patient with Ulcerative Colitis

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Purpose: Tumor necrosis factor alpha (TNF-α) inhibitors are biologic drugs used worldwide to treat autoimmune disorders such as inflammatory bowel disease and rheumatoid arthritis. Paradoxically, TNF-α antagonists can also induce autoimmune diseases being systemic vasculitis, systemic lupus erythematosus, and psoriasis the most common. Although the pathogenesis of these adverse events is unknown, increased IFN-α production by plasmacytoid dendritic cells and altered lymphocyte migration have been proposed as potential mechanisms. Case Description: A 21-year-old woman with ulcerative colitis who did not improve with systemic corticosteroids was started on adalimumab 40 mg subcutaneous every 2 weeks. After two doses of adalimumab, she developed gangrene of all toes and acute kidney injury requiring hemodialysis. Skin biopsy showed thrombi in the small vessels of the dermis. Renal biopsy disclosed diffuse proliferative glomerulonephritis with IgM and C3 deposits, and acute tubulointerstitial nephritis. Serologic work-up showed positive IgG anti-cardiolipin antibodies and low C3 levels. Antinuclear, anti-dsDNA, anti-Smith, anti-SSA, anti-SSB, anti-RNP, antineutrophil cytoplasmic antibodies, anti-cardiolipin (IgA and IgM), and anti-β2-glycoprotein I (IgG, IgM, and IgA) antibodies were not elevated. Lupus anticoagulant test and cryoglobulins were negative. She was diagnosed with adalimumab-induced catastrophic antiphospholipid syndrome (APS) and acute glomerulonephritis. Adalimumab was discontinued and she was started on warfarin, prednisone, azathioprine, and hydroxychloroquine. She did not have further thrombotic events and acute kidney injury completely resolved. Anti-cardiolipin IgG antibodies decreased to normal levels. Anticoagulation and immunosuppressive drugs were discontinued. After 6 months of follow-up, she has remained in complete clinical remission. Conclusion: This report highlights the occurrence of autoimmune disorders induced by TNF-α inhibitors. In the case described herein, if a patient treated with TNF develops APS and/or acute kidney injury, the possibility of a drug-induced event should be considered to provide prompt and effective treatment. Thus, careful monitoring for immune adverse reactions to TNF-α inhibitors is highly recommended.

4409

Clinical implications of rs6918289 variant in TREM2 within the Puerto Rican Population

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Background & Objectives: The rs6918289 TREM2 G>T polymorphism on chromosome 6p21.1 has been associated with altered levels of TNF-α producing inflammation and exacerbations of diseases. There is a paucity of data on the prevalence of this genetic variant and its association with clinical outcomes in Caribbean Hispanics, particularly among rheumatoid arthritis (RA) patients receiving treatment with TNF-α inhibitors. We aimed to determine the frequency distribution of rs6918289 in Puerto Rican RA patients treated with biologics and to assess pharmacogenetic associations with measures of clinical response to anti-TNF therapy. Methods: This is a single center, observational, pilot study to ascertain the presence of this polymorphism in DNA specimens collected from 70 RA patients on TNF-α inhibitors (buccal swabs). Genotyping was performed by using a Taqman®-SNP Genotyping Assay. RA disease activity was determined using the Disease Activity Score-28 (DAS-28) and functional status by the Health Assessment Questionnaire Disability Index (HAQ-DI). Statistical analyses to test for an association with well-defined clinical outcomes (i.e., remission/low disease, DAS28, HAQ-DI) were also performed using regressions and non-parametric tests. Results: The minor allele frequency (MAF) of rs6918289 in Puerto Rican RA patients was 13.6%. The presence of this polymorphism was not found to be statistically associated with remission/low disease activity (DAS-28 score<3.2). However, the mean rank of HAQ-DI was significantly different across the levels of carrier status (p=0.010). We also found that carriers of this variant appear to reduce HAQ-DI scale by 0.40 (p=0.022), which is clinically relevant. Conclusion: Clinical and statistical significance were found for HAQ-DI results providing a foundation for future clinical pharmacogenomics studies in RA patients. Acknowledgements: We are grateful to the patients who consented to participate in this study and rheumatologists of the Rheumatology Clinics at UPR-MSC. This work has been funded by RCMI program, grant #MD007600, NIMHD, NIH.

4411

The Cancer Prevention and Control (CAPAC) Research Training Program: developing the Next Generation of Cancer Researchers

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Background & Objective: The Cancer Prevention and Control Cancer (CAPAC) Research Training Program at the University of Puerto Rico Comprehensive Cancer Center (UPRCCC) offers a 10 or 15-week hands-on summer research experience in Puerto Rico (PR). CAPAC's goal is to increase the interest of master's level and health professional students to pursue a doctoral degree and/or professional career in cancer prevention and control research. Methods : CAPAC successfully recruited 50 trainees that participated in the program in 2021 and 2022, and one peer-to-peer mentor. Participants are matched to a mentor according to their research interest in basic, clinical, and population-based research at the UPRCCC and other institutions in PR. Activities include participation in a research project and complementary educational/professional activities. As part of the Program's evaluation, participants complete baseline, exit and follow-up surveys. Results: During the admissions cycle, CAPAC received 70 eligible applications in 2021 and 89 in 2022. Among the characteristics of the selected trainees, 78% were females, 86% were Hispanic/Latino and 44% came from US-mainland institutions. In the exit survey, 92% of trainees evaluated the program as successful, 69% of master-level trainees were confident in applying to a Ph.D./DrPH within 5 years after program completion, and 82% were confident to pursue a career in health disparities research. Among participants' outcomes, 5 articles have been published in peer-reviewed journals (7 additional submissions), 40 abstracts have been accepted to be presented at scientific conferences, and 3 trainees are enrolled in a doctoral

program. 91.3% of the 2021 cohort agree to having continuing benefits from participating in CAPAC one year after program completion. Conclusion: CAPAC has successfully completed two summer cycles and will continue to recruit 25 trainees annually for 2023 and 2024. This novel program continues to contribute to the development of the next generation of cancer researchers. Acknowledgments: NCI Grant #R25CA240120.

4412

Non-fatal opioid overdose and abuse cases at the UPR "Dr. Federico Trilla" Hospital after Hurricane Maria, 2018-2021.

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Background and Objectives: Opioid overdose deaths (OOD) have risen steeply in the United States since 1999, but not equally in all regions. The continuing increase has been largely fueled by illicitly manufactured fentanyls. Non-fatal overdoses (NFOO) strongly predict OOD deaths. We have shown that the UPR Hospital in Carolina experienced an increase in NFOO beginning in 2016, with a steep increase in 2017, the year Puerto Rico was disastrously impacted by Hurricane Maria. NFOO peaked immediately after the hurricane. The objective of this study was to test whether high levels of NFOO represent a new normal, or declined after the hurricane. Methods: De-identified records of diagnostic codes assigned by physicians for January 2018 through June 2021 were analyzed using Excel methods. Results: During this period, 143,943 Emergency Department (ED) cases were recorded. Of these cases, 230 were related to NFOO and 210 to OA; no OOD deaths were reported. The annual rates of NFOO cases per 100,000 ED patients fluctuated: The lowest rate was 112 in 2019; the highest was 275 in 2020. The rates of OA cases without overdose toxicity increased during the period from 112 in 2018 to 276 in 2021. Opioid withdrawal rates increased from 28 in 2018 to 64.6 in 2021 (n=58). Males 20-59 y/o comprised 76.5% of total NFOO cases, with 24.3 % in the 30-39 y/o cohort. The M:F ratio of total ED visits was 1:1.4 , compared with 8.7:1 for NFOO and 6:1 for OA. The causative opioid was coded as heroin in 162 cases, other opioid (n=50), synthetic opioid (n=1), opium (n=9), and unspecified opioid (n=1), with no methadone cases. Conclusions: The rates of NFOO and OA did not decline in the post-hurricane period. Further work is needed to identify the causes, which may include disaster-related trauma, illicitly manufactured fentanyls, and others. Acknowledgements: None. Approved by the IRB.

4413

Evidencias de Validez de la Escala de Actitud Juguetona de los Padres

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Trasfondo y objetivos. El juego puede beneficiar a niños y a adultos dentro del contexto familiar; incluso en casos en que algún miembro experimenta condiciones crónicas, como lo es el cáncer. Sin embargo, son muy pocos los instrumentos que evalúan la actitud juguetona del adulto. Este es el propósito de la Escala de Actitud Juguetona de los Padres durante la Co-ocupación del Juego (Escala AJugar). Este estudio tuvo como objetivos: (1) Evaluar la evidencia de validez de los resultados de la Escala AJugar aplicando análisis bajo la Teoría de Respuesta al Ítem; (2) Explorar la predisposición al juego de un grupo de madres, pacientes de cáncer. Método. Participaron 68 padres con niños entre dos años y medio a siete años (10 madres, pacientes de cáncer y 58 madres y padres con niños recibiendo servicios terapéuticos) que completaron la Escala AJugar. Se analizaron los datos mediante estadísticas descriptivas y Análisis Rasch. Resultados. Los resultados del Análisis Rasch apoyan la validez de los resultados de la Escala AJugar. No obstante, aspectos como el espectro de complejidad de los ítems y la unidimensionalidad deben continuar evaluándose. Las madres, pacientes

de cáncer, aparentan percibirse más motivadas a jugar con sus niños en comparación con el resto de la muestra. Algunos síntomas y efectos secundarios asociados con la condición y el tratamiento (ej. falta de energía) se ven reflejados en los tipos de juego y barreras para jugar identificadas por estas participantes. Conclusión. La Escala AJugar presenta evidencia de validez prometedora y posee potencial de utilidad para profesionales que utilicen el juego al trabajar con familias con niños o adultos atravesando retos del desarrollo o de salud. Estudios futuros con muestras de mayor tamaño que permitan análisis más robustos, son necesarios para seguir fortaleciendo la evidencia de validez para este instrumento. Agradecimientos: Este estudio fue apoyado en parte por el Hispanic Clinical and Translational Research Education and Career Development (HCTRECD) program (R25MD007607). Aprobado por IRB (#A9870121).

4414

Legal and clinical appraisal of law regarding the limitation life sustaining therapies in Puerto Rico

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Background & Objectives: This paper examines laws and regulations on withdrawal of life-sustaining therapies by proxy in patients without decision making capacity in Puerto Rico. More specifically, it intends to understand what the law designates as legal, as well as explore what specific topics are left undetermined. With this as an aim, it is this paper's intention to clarify important legal topics regarding patient autonomy and substituted judgement in Puerto Rico by analyzing the law and pertinent legal precedents. These include, but are not limited to, Law 160-2001 (Advanced Directives) and the "Lozada case" which are both this paper's focus. Methods: Methods consisted of literature review, writing, and editing. A law scholar was consulted for proper law interpretation. Results: This paper found that Law 160-2001 detailing advanced directives lacks clear guidance regarding withdrawal of life sustaining therapies yet concludes that proper interpretation does not illegalize the practice. Conclusion: Together, this review lays ground to a fuller understanding of Puerto Rico's legal standing on surrogate decision making with the ambition to create awareness and guidance within the local medical and hospital community of areas in which more work is needed to ensure patient-centered care of incapacitated patients. Acknowledgements: This research was supported by University of Pittsburgh Palliative Care Research Program with the Allan Gleitsman Student Diversity Award. The authors declare there is no conflict of interest.

4415

Sentimientos de soledad y su relación con los síntomas de ansiedad en estudiantes universitarios durante la pandemia de COVID-19

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Trasfondo y Objetivo(s): El aislamiento social como medida de mitigación de contagios por la pandemia del COVID-19 produjo cambios en la sociedad y los estilos de vida. Estos cambios tuvieron una repercusión en la salud mental de la población, particularmente estudiantes universitarios. A pesar de esto no hay estudios recientes que evalúen la relación que tienen los sentimientos de soledad en la ansiedad de estudiantes universitarios. Nuestro objetivo es explorar la relación que tienen los sentimientos de soledad durante la pandemia con los síntomas de ansiedad. Método: En el presente estudio de corte transversal se reclutó una muestra por disponibilidad de 356 estudiantes universitarios. Los investigadores utilizaron una encuesta en línea desarrollada en la plataforma de Microsoft Forms que recopiló datos sociodemográficos e información sobre los síntomas de ansiedad (GAD-7) y los sentimientos de soledad

(TILS) del estudiantado durante la pandemia. El equipo de investigación realizó una regresión lineal simple para determinar la relación que tiene los sentimientos de soledad con los síntomas de ansiedad de los estudiantes universitarios. Resultados:Los resultados del análisis revelaron que los síntomas de soledad predicen significativamente el 15% de la varianza de los síntomas de ansiedad experimentados por el estudiantado (R^2 = .15, F(1,340) = 59.17, p < .001). Conclusión: Estos resultados sugieren que el aislamiento social aún tiene efectos en la salud mental de los estudiantes universitarios. Agradecimientos: Los autores no tienen conflicto de interés que divulgar. Este proyecto no fue financiado por fuentes internas ni externas.

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Identification and evaluation of repurposed drugs as antiviral candidates for SARS-CoV2

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COVID-19 is a pandemic disease caused by the emerging virus, SARS-CoV2. Since the beginning of the pandemic, an enormous effort has been initiated worldwide to develop new vaccines and drugs for the prevention and treatment of COVID-19. This study aims to identify repurposed drugs capable of blocking SARS-CoV2 entry into cells for the development of novel COVID-19 therapeutic agents. Our efforts focused on targeting the spike (S) protein, which is responsible for mediating the initial steps of infection. We hypothesize that drugs capable of disrupting the interaction of the S protein with the ACE2 cell receptor and/or interfere with virus entry events will reduce the infection levels in target cells. Firstly, virtual screening of a commercially available compound library was done to identify drugs that showed energetically favorable interactions with the receptor binding domain (RBD) of the S protein. From the virtual screening, 50 out of 444 drugs displayed favorable interactions with the S protein RBD and were selected for in vitro testing using Spike:ACE2 Inhibitor Screening Assay and virus entry assays. Three drugs (MCE-8, MCE-13, MCE-50) showed a significant decrease in the infection levels (IC50<1μM). Nevertheless, only MCE-8 disrupted the interaction of the S protein with the ACE2 cell receptor. These results suggest that the three drugs (MCE-8, MCE-13, MCE-50) identified with antiviral activity have different molecular mechanisms. To determine which entry mechanism (endocytosis or membrane fusion) the identified antiviral candidates are disrupting, the virus entry assays were done in the presence or absence of the cellular protease TMPRSS2, which is essential only for membrane fusion. The results showed that MCE-13 only blocks virus entry by endocytosis, while MCE-8 and MCE-50 block virus entry using both mechanisms. These results suggest that MCE-8 and MCE-50 are promising antiviral candidates and support further evaluation using animal models. Acknowledgements: This research was partially supported by the UPR Emergency COVID-19 Research Project Program Puerto Rico Science, Technology & Research Trust and the NIMHHD grants U54MD007600. The authors have no conflict of interests to declare.

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Compromiso laboral dentro de la diversidad generacional de profesionales de enfermería de Puerto Rico

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Trasfondo y Objetivos: Las generaciones trabajadoras en esta investigación son: Tradicionalistas, “Baby Boomers”, X, Y, y Z. Las últimas son más tecnológicas y las primeras más tradicionales, lo que ha cambiado la adaptación a los escenarios de trabajo. Esto puede generar un choque de opiniones, maneras de trabajar y conflictos interpersonales que afectan

el bienestar ocupacional, la ejecutoria, resultados y la seguridad de pacientes. El compromiso laboral es la obligación afectiva, profesional contraída con el trabajo. El propósito de esta investigación fue 1) medir el compromiso laboral dentro de la diversidad generacional de profesionales de enfermería en PR; 2) proveer una fuente de información sobre de diferentes generaciones; 3) evaluar, comparar y analizar la información para que sirva como base del desarrollo de estrategias de prevención de conflictos generacionales en escenarios de trabajo. Métodos: La muestra consistió en 371 sujetos. En esta investigación cuantitativa descriptiva correlacional transversal se analizó promedio y correlaciones de variables de conducta y demográficas utilizando estadísticas no paramétricas. Se utilizó la Escala de compromiso laboral de Utretcht (UWES-17) que mide: vigor, dedicación y absorción que reflejan energía, activación y felicidad o inmersión en el trabajo. Resultados: No se encontró correlación entre las generaciones y compromiso laboral o sus variables de conducta. Se encontró correlación significativa (α) ≤ .05 con las variables: 1) edad y absorción (.03) a mayor edad mayor absorción; 2) ingreso promedio y bienestar de trabajo (.01) a menor ingreso menor bienestar de trabajo; 3) orientación sexual y absorción (.035) en donde heterosexuales presentaron nivel alto/moderado mientras que homosexuales y bisexuales moderados/alto. Vigor, dedicación y absorción (.001) afectan el bienestar de trabajo. Conclusión: No hay una relación entre las generaciones y el bienestar o compromiso de trabajo. Sin embargo, se pudo ver una relación con la edad, el salario promedio y la orientación sexual. Agradecimientos: Colegio de Profesionales de Enfermería de Puerto Rico. Aprobado: IRB: 2290035515.

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Determining Quality of Sleep and the associated clinical profiles of Puerto Ricans with inflammatory bowel disease.

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Introduction: Inflammatory bowel disease (IBD) has been associated with a lower quality of life and work productivity, with over 75% of IBD patients disclosing sleep problems. Poor sleep quality has been linked to inflammation. We aim to document the prevalence of sleep disturbances in Puerto Ricans with IBD and establish the clinical profile and associated characteristics of these subjects based on medications, IBD-related surgeries, and disease manifestations. Methods: Patients with IBD attending a scheduled clinic visit who consented to participate completed the Pittsburgh Sleep Quality Index (PSQI), and a questionnaire designed by the researchers to collect socio-demographic and clinical data, such as symptoms, surgeries, and medications. The PSQI is a validated questionnaire that assesses sleep quality by generating a score evaluating 7 variables, among them sleep latency, duration, and disturbances. A global PSQI score above 5 is indicative of poor sleep quality. Chi-square and Fisher's test were used to measure each nominal variable, and Wilcoxon-Mann-Whitney to address PSQI scores against clinical variables using Stata 14.2. This study is approved by the MSC-IRB. Results: Of 161 participants recruited, 149 completed the PSQI questionnaire. Most were female (n=70; 50.7%), had Crohn's disease (n=100; 69.4%), and the average age was 40.0 +13.1. Poor sleep quality was present in 71.5% (n=103) of subjects. Medication use for IBD was present in 82.5% (n=123), with the most common being biologics (n=110; 73.8%). There was no statistical association between PSQI score and age (p=0.522), insurance (p=0.123), IBD type (p=0.103), recent IBD symptoms (p=0.136), past surgeries (p=0.346), and having an ostomy (p=0.920). However, a significant difference was observed between sexes (9.37+ 4.00 vs 7.35+4.47; p=0.012). For medications, no statistical significance was observed between PSQI score and general use (p=0.275) nor within each of the types reported: biologics (p=0.852), immunomodulators (p=0.928), 5-ASA (p=0.904), and corticosteroids (p=0.654). Conclusion: A large proportion of our patients have poor sleep quality, as reported in other populations. Sleep history is not routinely documented in most clinic visits, thus missing an important component

of the patient's welfare. IBD medications, surgeries, and disease manifestations were not significantly associated with the PSQI score. Larger studies are needed to better characterize sleep disturbances in patients with IBD and identify potential causes to address this issue and impact patient's quality of life.

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Let's Innovate: The Dynamic Surgical Drape™

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The Dynamic Surgical DrapeTM (DSDTM) is an innovation to provide a surgical environment with working space that limits contamination from a non-sterile ambient environment. This is accomplished by having a mechanical aperture in the surgical drape that opens when the hands of the surgeon are near the drape and closes when the hands move away from the opening. Activation of the mechanism is accomplished by Radio Frequency Identification (RFID) technology, e.g. by the surgeon wearing a RFID ring under a sterile glove avoiding touching the opening or the surgical drape. The opening can be in the form of a circular iris mechanism, or a square that opens by having two sheets of material that separate from each other in a linear manner. The drape and opening mechanism are mounted on a moveable table in which height and position can be adjusted over the surgical field of the patient. Application of the DSDTM lends itself to situations where immediate acute minor surgery is required without having to dedicate a full scale sterile surgical setting or where space for intervention is limited. Examples include an emergency room or areas where the environment is highly contaminated, e.g., in a battlefield, volcanic eruption or forest fire. The DSDTM can include a thermal reflective bottom coating to help stabilize the thermal environment below, providing an ambient room temperature at 700 F or below and avoiding additional physical stress to pediatric or burn patients where higher temperature is desired. Preliminary results include the creation of several functioning prototypes that provide proof-of-concept. A US Patent for DSDTM has been issued and additional international patents have been filed. Future developmental activities will focus on refining the prototypes, evaluating their efficacy with animal tissues, and seeking licensing agreements to further develop and commercialize this innovation. Acknowledgement: Department of Pharmacology, School of Medicine, University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico

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Perfil sociodemográfico según su estatus de pobreza de la población de 60 años o más en el 2006-2007

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Trasfondo y Objetivos: La población de Puerto Rico ha estado envejeciendo aceleradamente desde la década del 2000. El riesgo de caer en la pobreza aumenta en distintas etapas de la vida, en particular la niñez y la vejez. Desde el 2006, Puerto Rico ha estado enfrentando una crisis económica que ha creado un sentir de estancamiento social y económico en la población. El proyecto sobre las condiciones de salud de los adultos mayores en Puerto Rico (PREHCO) comenzó a colectar información de calidad para conocer las necesidades de esta población y los aspectos que lo influyen. El propósito de este trabajo fue analizar las características sociodemográficas de la población de 60 años o más pobre en Puerto Rico durante el comienzo de esta crisis económica y que participaron de PREHCO. Método: Investigación descriptiva a partir de datos de la segunda ronda de entrevistas de PREHCO. Las variables consideradas fueron sexo, edad, arreglo de vivienda, condiciones de salud crónicas y estatus de empleo. Resultados: Cerca de dos terceras partes de la población entrevistada residía en hogares con ingresos por debajo del nivel de pobreza y de estos el 65.5% eran mujeres. La edad

promedio de la población bajo el nivel de pobreza fue de 75.4 años. El 79.6% de los entrevistados que residían solos se encontraban por debajo del nivel de pobreza. El 55.8% de la población pobre padecía de al menos una condición de salud crónica. En este periodo 5.5% de los entrevistados se encontraban laborando y el 45.1% de estos eran pobres. Conclusión: Las características que más se diferenciaron fueron el arreglo de vivienda y el sexo. Las condiciones médicas no presentaron mucha diferencia por estatus de pobreza y las medianas de edad se diferenciaron por poco más de un año. Agradecimientos: Universidad de Puerto Rico, Proyecto Condiciones de Salud de los Adultos Mayores en Puerto Rico IRB 0250219, Instituto de Estadísticas de Puerto Rico.

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A native purification scheme for bacterial genotoxin USP that preserves its potent endonuclease activity.

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Genotoxin molecules made by gut bacteria have been associated with inflammation and colorectal cancer (CRC). The Uropathogenic Specific Protein (USP) is a bacterial genotoxin mainly encoded in some strains of E. coli from the gut and the urinary tract. This genomic island that contains the usp gene also encodes small proteins known as "Immu" that protect the bacteria from the genotoxicity. Although little is known about the role and mechanism of USP in disease, studies from our lab have revealed a correlation between the presence of usp genes in stool samples, and clinical findings of adenomatous polyps and CRC. We have also observed polymorphisms in the USP sequence that are associated with cancer, suggesting a role for this enzyme in a clinical scenario. This work describes a native protocol to purify USP from a bacterial isolate (EC640) obtained from a Puerto Rican patient. We purified three constructs: USP, USP-Immu, and a mutated USPIΔHNH with a disrupted nuclease active site. Our purification resulted in a 20X to 80X higher solubility of USP in the presence of Immu or the ΔHNH mutation, with low stability for active USP by itself. Although the final yield of active USP was low at 30 micrograms per liter of culture, we demonstrated for the first time that USP has potent endonuclease activity at low concentrations (0.1μM) similar to DNaseI, as shown by DNA gel electrophoresis. The purified protein USPIΔHNH was further used to generate mouse monoclonal antibodies (MAbs) to detect USP in clinical samples. The resulting MAbs were tested for use in western blots and ELISAs. Current work is now focused on evaluating the activity of USP on intestinal cells to understand its genotoxin mechanism. Acknowledgements: Thanks to NIGMS-RISE Program (R25GM061838), the authors, and the lab team, especially to Vilmarie Mercado for its lab support.

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Migración interna y de retorno entre adultos de 60 años de edad o más, Puerto Rico, 2002-2006

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Trasfondo y objetivos: Las personas de 60 años o más de edad constituyen una cuarta parte de la población de Puerto Rico, envejecida por las tendencias de fecundidad y mortalidad, la emigración de adultos en edad productiva y el retorno de adultos mayores jubilados. Entre 2009 y 2019, se observó un aumento de sobre siete puntos porcentuales en la proporción de inmigrantes gerontes desde Estados Unidos a Puerto Rico. Las necesidades de salud, la dependencia económica y física, y la disminución de las redes de apoyo pueden motivar la migración durante la tercera edad. Este estudio describe la migración interna y de retorno entre adultos mayores comparando las primeras dos rondas del Proyecto Condiciones de

salud de los adultos de edad mayor en P.R. (PREHCO). Método: La investigación descriptiva está basada en datos provistos por el estudio longitudinal PREHCO desde 2002 hasta 2006, representativo de la población de 60 años o más de P.R. bajo el marco muestral del Censo de Población y Vivienda de 2000, que recoge una muestra polietápica por conglomerados. El análisis tomó las variables: sexo, edad, estado conyugal, en qué lugar vivía antes de mudarse donde vive ahora y razón principal de retorno desde EE.UU. a P.R. Resultados: En 2002, 9.5% de la población geronte migró internamente mientras que 12.3% regresó desde EE.UU., pero en 2006 la migración interna disminuyó a 3.2% y la migración de retorno a 5.6%. Los viejos jóvenes migraron más que los viejos viejos, y a lo largo del estudio se observaron diferencias entre los sexos por tipo de migración. Las personas casadas migraron más en ambas rondas del estudio. Conclusión: Las razones principales para retornar a Puerto Rico fueron personales o familiares. Para 2002 no se observaron diferencias importantes entre los sexos respecto a las razones para regresar, contrario al 2006. Agradecimientos: Universidad de Puerto Rico Recinto de Ciencias Médicas, Proyecto Condiciones de salud de los adultos de edad mayor en Puerto Rico IRB 0250219 NIH/NIA RO1 AG1620991A2, Organización Panamericana de la Salud e Instituto de Estadísticas de Puerto Rico.

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Quadrifurcation of the Celiac Trunk with Dual Irrigation of the Spleen

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Purpose: Describe anatomical variations of the branching pattern of the celiac trunk and its clinical implications in the irrigation of the upper abdominal region. Case Description: During a routinary dissection of the gastrointestinal system of a female cadaver, an anatomical variation described as a quadrifurcation of the celiac trunk was found. In this case the celiac trunk is giving rise to the left inferior phrenic artery, common hepatic artery, a splenic trunk, and an hepatogastric trunk. The common hepatic artery divides into gastroduodenal artery and proper hepatic artery, which then gives rise to the right hepatic artery. The splenic trunk divides in two splenic arteries and the hepatogastric trunk gives rise to the left gastric artery and the left hepatic artery. Conclusion: Identifying these variations of the celiac trunk will help further expand the pool of knowledge, aiding surgeons in upper abdominal procedures and interventions such as gastric and hepatobiliary surgeries, and the removal or transplant of organs. Moreover, it will help minimize the risk of accidental vessel damage and intra-abdominal bleeding. Finally, it can serve as a tool in the identification of possible sources of irrigation for abdominal tumors. Acknowledgements: We would like to acknowledge Dr. María Sosa for aiding in the identification of the aforementioned anatomical variations. The authors declare that they have no conflict of interest.

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The T1858T polymorphism in the PTPN22 gene and susceptibility to autoimmune diseases: a meta-analysis

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Background and Objectives: The PTPN22 gene has been previously linked to development of autoimmune disorders of the thyroid gland (AITD), type 1 diabetes (T1D), rheumatoid arthritis (RA), and systemic lupus erythematosus (SLE). This meta-analysis aimed to assess the association between the C1858T polymorphism of the PTPN22 gene and these autoimmune disorders, and if it differed between organ-specific or systemic diseases. Methods: A total of 45 case reports that met the eligibility criteria were identified using the PubMed and EBSCOHost databases: 12 for T1D, 8 for AITD, 17 for RA, and 8 for SLE. The presence of heterogeneity and publication bias were assessed using Cochran's Q and I2 values

and Begg's test, respectively. Results: Using PRISMA standards, this meta-analysis found an association between the C1858T variant and susceptibility to these autoimmune diseases under genotypic (TT vs. CC; T1D OR: 4.13[95% CI 2.25-7.56]; AITD OR=5.95[2.28-15.52]; RA OR= 3.35[1.59-7.04]; SLE OR = 7.99[3.03-21.11]; Systemic OR= 4.62[2.56-8.32]; Organ-specific OR= 4.58[2.75-7.64]), heterozygous (TC vs. CC; T1D OR: 2.33[95% CI 1.55-3.49]; RA OR= 2.24[1.57-3.21]; SLE OR = 1.85[1.43-2.39]; Systemic OR= 2.10[1.63-2.70]; Organ-specific OR= 2.02[1.48-2.77], recessive (T1D OR: 3.67[95% CI 2.01-6.72]; AITD OR = 5.73[2.20-14.92]; RA OR= 2.89[1.38-6.06]; SLE OR = 7.04[2.68-18.53]; Systemic OR= 4.02[2.23-7.23]; Organ-specific OR= 4.17[2.50-6.95]) and dominant (T1D OR: 2.41[95% CI 1.67-3.48]; AITD OR=1.76[1.15-2.69]; RA OR= 2.30[1.60-3.29]; SLE OR = 2.14[1.67-2.74]; Systemic OR= 2.21[1.72-2.85]; Organ-specific OR= 2.15[1.61-2.86]) models. No significant association was found under the heterozygous model in AITD (OR = 1.58[0.98-2.54] when all studies were included. Upon exclusion of those that were not in Hardy-Weinberg equilibrium, the association became significant (OR = 1.85[1.13-3.02]). Conclusions: These results suggest that there appears to be a significant association between susceptibility to T1D, AITD, RA, and SLE and the C1858T polymorphism of PTPN22, and is also observed when classified as systemic (RA and SLE) and organ specific (T1D and AITD) autoimmune diseases. Acknowledgements: The authors have no conflicts of interest to declare and no financial interests to report.

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Hermansky-Pudlak Syndrome Associated Proteins Appear to Have an Important Role in the Formation of Lipid Droplets

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Hermansky-Pudlak Syndrome (HPS) is a rare autosomal recessive disorder that is characterized by highly prevalent pulmonary fibrosis, granulomatous colitis, and abnormal biogenesis of lysosome-related organelles. Up to date there are 11 types of HPS in which HPS type 1 and HPS type 3 are the most common in Puerto Rico due to two founder mutations. A previous study in HPS mice models suggests that HPS proteins have an important role in lipid metabolism. Hepatocytes of HPS1 mutant mice showed smaller and more abundant lipid droplets in comparison to wild-type. Lipid droplets are organelles that not only store lipids but that are also involved in its usage and metabolism. The relationship between HPS proteins and lipid droplets, and its impact of the pathogenesis of HPS, have not yet been discovered. Our study aims to determine the role of HPS1 protein in the formation of lipid droplets. Lipid droplets from a Puerto Rican HPS type 1 patient dermal fibroblasts (GM14609, Coriell Institute) and, as control, from a healthy Puerto Rican dermal fibroblasts (GM00037, Coriell Institute) were stained with 300 nM of Nile Red and incubated overnight with and without 150 uM of oleic acid. HPS type 1 fibroblasts incubated with oleic acid showed a higher number of lipid droplets in comparison to control fibroblasts. However, there was no difference in lipid droplets number between the HPS type 1 fibroblasts and control fibroblasts without the oleic acid overnight incubation. Our results suggest that HPS1 protein plays an undiscovered role in the formation or fusion of lipid droplets. Future directions include assays to observe the cellular localization of HPS1 in regards to the lipid droplets, and a lipidomics approach to analyze the composition of lipids in these cells. This research was supported in part by NIMHD RCMI grant U54 MD007600 and NIGMS RISE R25GM061838 and PR INBRE P20GM103475 grants.

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Interdisciplinary Educational Project: Collaboration between Speech-Language Pathology and Social Work Programs

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Background & objectives: Interdisciplinary collaboration (IC) is a framework that establishes join efforts and communication to improve clients' outcomes in the field of health. By modeling IC at the Academia, students prepare themselves to work directly with allied professions. The objective of this educational project was to evaluate a Summer Summit Program (SSP) at a Hispanic nonprofit university. The SSP consisted of applied conference presentations among professionals in social work, speech and language pathology, occupational therapy, audiology, clinical psychology, school psychology, education, and rehabilitation counseling. Methods: This exploratory cross-sectional study implemented a nonexperimental research design to collect attendees' feedbacks after each conference presentation. The survey consisted of six questions to assess attendees' satisfaction and learning. Three questions were asked using a 5-point Likert scale for measuring satisfaction, while open-ended questions were used to explore learning. Descriptive statistics is presented at the univariable level of analysis, while qualitative data is presented through a content-analysis framework. Results: An average of 47.85 surveys were collected per each conference (SD= 6.86). Response rate was 70 % (n=335). Eighty percent of the sample strongly agreed with the statement: "This lecture met my expectations.". Eighty-four percent strongly agreed that each conference presentation met their needs as a student. Eighty-five strongly agreed that topics were relevant to their educational development. Open-ended question responses reveled attendees were able to learn on how to apply IC with allied health professionals. Attendees gave input about which topics should be covered in future summits. Conclusion: Implications include: 1) creation of a human behavior course jointly with speech and language pathology; 2) collaboration between each student's discipline association; 3) promote collaboration between faculty. Research about IC is needed to keep understanding the impact of IC on student's satisfaction and academic learning.

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Atypical Presentation of Vasa Previa Type II with Marginal Cord Insertion

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Purpose: This case report aims to present an atypical case of vasa previa (VP) type II with marginal cord insertion (MCI), discuss its clinical relevance and emphasize the importance of proper management. Case description: Case of a 35-year-old female, G3P0A2, with a history of three episodes of bleeding during her third trimester, two of which required admission at San Juan City Hospital. The patient was evaluated by a Maternal-Fetal-Medicine (MFM) specialist at 29 0/7 weeks of gestation and diagnosed with VP type II. Sonographic images revealed a bilobed placenta with an atypical MCI, placenta previa of the posterior lobe and velamentous vessels running <3cm from the cervical os. As recommended by the MFM specialist, her admission was prolonged until a cesarean section was performed at 34 0/7 weeks of gestation. A 2035-g female was delivered with Apgar scores of 7/8 at 1/5 min, respectively. The newborn required one blood transfusion due to anemia of 10.3g/dL following delivery. No further complications presented during their stay. Both the patient and her newborn were discharged from the hospital in a timely manner. Conclusion: VP is rare, occurring in 1/2500 of deliveries, and presents a high risk for pregnancies given its complications involving fetal hemorrhage or exsanguination. The Society for MFM recognizes two types of VP based on placentation, the nature of umbilical vessels and their proximity to the cervical os. However, no specific description stands regarding the insertion of vessels for VP type II. Cases with a variant MCI involve additional risks for intrauterine growth restriction and low birth weight. These might result from a reduction in fetal circulation due to abnormal insertion, positioning of vessels and/or obstructed flow. Thus, awareness of VP type II variants is of utmost importance for proper

management, risk prevention and adequate execution in case of emergencies. Acknowledgments: The authors would like to thank the patient for agreeing with the publication of her case.

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Prevalence of HPV in head and neck cancers in Puerto Rico

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Introduction: The incidence of head and neck cancers (HNC) associated to human papillomavirus (HPV) infections has increased in the last decades in the United States. In Puerto Rico, HNC are the fourth and twelfth most common cancers among Puerto Rican men and women, respectively. The aim of this retrospective study is to describe the prevalence of HPV infection, by anatomic site, among a sample of HNC tumors in Puerto Rico (PR), from 2008-2021. Methods: Formalin-fixed paraffin embedded (FFPE) HNC tissue samples were obtained from biobanks of two pathology laboratories in PR. DNA was extracted from 145 FFPE HNC tissue samples using standard methods. Detection of the presence of HPV and HPV genotyping was performed using the RHA kit HPV SPF10-LiPA25 that detects more than 40 HPV genotypes. Covariates obtained included age, sex, location of head and neck primary tumors, smoking and alcohol consumption. Results: Among the 145 samples analyzed, mean age of cases was 61.6 years ± 10.9 SD, 84.8% were men and 62.8% were known smokers. Among tumor types, the most commons cancers were larynx (48.3%), oral cavity (29.7%) and oropharynx (15.9%), while a smaller proportion were hypopharynx (4.1%) and nasopharynx (2.1%). Overall, 40.7% of all tumor samples were HPV-positive, 31.7% were positive to high-risk HPV types and 33.1% to HPV types included in the nonavalent vaccine. Among HPV-positive samples, 49.2% were positive to HPV-16; the second most common HPV type was HPV-52 (13.6%), followed by HPV-18 (11.9%). The prevalence of HPV positivity ranged from 100% in nasopharynx samples, 56.5% in oropharynx, 50.0% in hypopharynx, 35.7% in larynx to 34.9% in oral cavity. Conclusion: HPV was more commonly found in oropharyngeal samples. The most common HPV types found are included in currently available nonavalent vaccine. Further analysis is underway to estimate the HPV attributable fraction of HNC in Puerto Rico.

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Andrographolide-dependent Metabolic Reprogramming in Prostate Cancer Cell Lines.

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Background & Objetives: Because of the known secondary effects of most synthetic anticancer drugs there is a need to find alternative natural compounds that either have less side effects and/or potentiate the effects of classical drugs. In this work we study Andrographolide, the main bioactive component of the medicinal plant Andrographis

paniculata to test its ability to reverse the metabolic reprogramming of prostate cancer (PCa) cells. Methods & Results: Gene expression analysis shows that Andrographolide upregulates carbohydrate-related gene expression in PC3 and 22Rv1 PCa cells. At the level of protein expression, we found that Andrographolide treatment leads to upregulation levels of the metabolic modulator and tumor suppressor p63 in both cell lines. Extracellular flux analyses show that Andrographolide treatment leads to significant reduction in basal respiration, ATP production, proton leak, and non-mitochondrial oxygen consumption in PC3 cells. In 22Rv1 cells, Andrographolide treatment leads to a decrease in the spare respiratory capacity. When we measured ATP synthesis rate, we observed that in both cell lines, Andrographolide treatment induced a shift toward glycolytic ATP synthesis over mitochondrial ATP. We also studied if Andrographolide treatment leads to other mitochondrial phenotypes such mitochondrial DNA (mtDNA) abundance, reactive oxygen species (ROS), and mitochondrial membrane potential. While no changes in mtDNA abundance after Andrographolide treatment were detected in either cell line, we observed an increase in ROS production and a concomitant decrease in mitochondrial membrane potential in 22Rv1 cells 48 hours after treatment. Conclusions: Taken together, our results show that Andrographolide treatment induces important metabolic changes in prostate cancer cells, making this compound a potential tool for metabolic regulation of cancer cells. Acknowledgements: This research was supported by Institutional funds from the CCCUPR & UPR/MDACC Partnership for Excellence in Cancer Research U54 CA096297-CA096300.

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Nursing Professionals' Experiences during the COVID-19 Pandemic in Puerto Rico: A Phenomenological Study

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Background and Objectives: The COVID-19 pandemic has impacted nursing frontline professionals. The aims of this study were to explore experiences of nursing professionals in Puerto Rico during the pandemic, examine the impact on their health and provide research development opportunities enhance research capacity. Methods: This interpretative phenomenological study recruited graduate nurses who participated in one in-depth semi-structured virtual interviews. Interviews were audio recorded and transcribed. The data analysis process was guided using the following steps: 1. Reading and re-reading, 2. Initial noting, 3. Developing emergent themes, 4. Searching for connections across emergent themes, 5. Moving to the next case, 6. Looking for patterns across cases, and 7. Writing up. In addition, Van Manen's thematic structure of four foundations was used as a complement to guide reflection and interpretation. Faculty and students participated throughout the process. Findings: Seven nursing professionals' lived experiences caring for Covid-19 patients were gathered. Their ages ranged from 31 to 45 and had worked between 2 and 14 years providing direct care. Themes that emerged from narrations included compassion fatigue, teamwork, working beyond clinical role, and gratification. Nurses expressed dealing with a very "difficult" situation, "fear of being infected", "infecting my family", and "working together" to "get through it" and "better help patients". Nurses also expressed feelings of "anxiety" and "lack of institutional support." Additionally, the "impact" of working with patients, "feeling good" for "being there, good or bad" and "support from families." Conclusion: Nurses' narrations point to the complexities of their experiences working during the pandemic. They had to transcend usual demands even though they often lacked needed support. We must recognize the value of nursing and reflect upon changes in healthcare that are essential to move nursing forward. Acknowledgement: This research was supported by Programa Proyectos Piloto (PiP), Proyecto Título V UPR-RCM PO31S200104.

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Pectoralis Nerve Block (PECS) Block to Ameliorate Pain in Mastectomy Adult Female Patients

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Clinical Question: In adult women undergoing mastectomy surgery (P) how does pectoral nerve block (I), compared with the standard treatment (C), affect pain intensity, opioid consumption, analgesic request, nausea, and vomiting (O) during the perioperative period (T)? Scope: Mastectomies performed for breast cancer management have been associated with severe acute postoperative pain. Currently, no formal approach has been established for the management of postoperative pain in breast cancer patients. Literature Review: The opioid sparing effects of peripheral nerve blocks can be implemented as an analgesic alternative to decrease acute pain scores with less opioid consumption, reduce systemic effects, reduce hospital length of stay, and improve postoperative mobility. Project Implementation: Following standard anesthesia care for the specified elective surgery, an ultrasound guided PECS block was performed with the patient under the effects of anesthesia. Following termination of the intervention, the progress of the recruited participants was monitored in planned intervals. Results: Thirty-one patients with a median age of 69 participated. Pain scores reported after PECS block administration were found to be mild on PACU arrival in 14 of 31 (45%) patients at 0 hours, 9 0 31 (29%) at 6 hours, and 11 of 31(35%) at 24 hours. Moderate pain was documented in 4 of 31(13%) patients at 0 hours, in 2 of 31 (6%) at 6 hours, and 3 of 31 (10%) at 24 hours. Severe pain scores were only present for 4 of 31 (13%) patients at the 0-hour assessment and did not present for any of the patients at the 6-hour or 24-hour pain assessment. Practice Implication: PECS block implementation as part of a multimodal approach in the perioperative period for patients undergoing mastectomies to be a safe efficacious, and evidence-based recommendation to decrease intraoperative and postoperative opioid consumption. IRB # 22100030041

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Increasing Rate Of Skin To Skin Contact In Labor Room To Improve Breastfeeding Rates After Delivery: A Quality Improvement Project

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Introduction: Skin-to-skin contact (SSC) in the first hour of life points to higher rates of breastfeeding and associated physiologic, social, and psychological benefits for both the mother and baby. For example, SSC helps with thermoregulation and cardio-respiratory stability for the neonate. As for the mother, it can decrease maternal stress. The rate of SSC at University District Hospital's (UDH) labor room was less than 26%, hence our objective was to identify current obstacles and improve the rate of skin-to-skin contact in the first hour of life. Methods: First, we collected the percentage of deliveries that implemented SSC in the first hour after birth in the UDH labor room for baseline data. We identified contributing factors that delayed initiation of SSC using root cause analysis flow chart and Fishbone diagram. We implemented multiple interventions including nurse staff education, anesthesia team orientation, parent educational brochures and resident knowledge and communication. Interventions were periodically done throughout the year. Subsequently, we used the Plan, Do, Check and Act methodology to assess the impact of interventions. Rate of SSC were reviewed from January 2022 to December 2022, including births

of neonates ≥ 35 WGA with first Apgar ≥ 7. Using a standard run chart, we plotted SSC rate per month and compared it to baseline and to our goal of 50% rate. Results: During the three (3) weeks of baseline data gathering, only 25% of SSC was achieved. After several interventions were implemented that addressed the identified root causes, up to 50% increase in SSC was observed in the first hour of life of the infant. Conclusion: Implementation of quality improvement methodologies are useful and essential tools to increase SSC rates in hospitals and therefore breastfeeding rates if obstacles to their occurrence are properly identified from a system-wide analysis perspective. Acknowledgements: We want to thank all obstetrics & gynecology residents and the labor & delivery room staff.

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Whole protein and small metabolite analysis of pathogenic Escherichia coli outer membrane vesicles via MALDI-ToF mass spectroscopy

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Colorectal cancer (CRC) is the second leading type of cancer in Puerto Rico with 70% of CRC diagnoses being related to environmental factors such as diet, alcohol consumption, smoking, and the intestinal microbiota. Colibactin is a genotoxin produced by Enterobacteriaceae that contain the polyketide synthase (pks) genomic island. pks+ Escherichia coli have been implied in causing cell cycle disruption in host colon epithelial cells and are suggested to play a role in colorectal cancer. The way colibactin is transported into eukaryotic cells is still not clear but outer membrane vesicles (OMV) from such E. coli are hypothesized to be the carriers of the genotoxin into host cells. In this project we compared OMV small molecule components in E. coli strains IHE3034, IHE3034ΔclbP, and DH10B, via MALDI-ToF mass spectrometry to investigate the presence of colibactin and other toxins that may be transported via these vesicles. Here we demonstrate that OMVs were produced from these strains with varying concentrations and characterization through MALDI-ToF. We performed MS2 on peak 734 m/z and after piecing together the mass losses, we preliminarily believe it might belong a peptide fragment with a sequence of VLLL, LLLV, VNNL or LNNV. We also performed whole-protein mass spectrometry and identified a prominent peak at around 15,682m/z in IHE3034 OMV samples that we have preliminary identified as a membrane associated protein through proteome analysis. Acknowledgments: This project was supported by CAPAC (Award Grant Number #R25CA240120) from the NCI and NIGMS-RISE (Award Grant Number #R25GM061838). Grant Number #1S10OD025143-01A1 was used for the acquisition of a Shimadzu MALDI-ToF 7090 Mass Spectrometer.

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Intravenous Ondansetron Prior to Spinal Anesthesia for Elective Cesarean Delivery

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Clinical Question: In patients undergoing cesarean section with spinal anesthesia (P), how does the use of IV ondansetron with IV fluids (I), compared with preoperative fluids bolus (C), affect blood pressure (O) during the intraoperative period (T)? Scope: The most common intraoperative complication after spinal anesthesia during cesarean delivery is maternal hypotension. This complication is associated with negative maternal and fetal outcomes and is in part due to the Bezold–Jarisch reflex, which is mediated by serotonin receptors. The 5-HT3 receptor antagonists may be used to reduce the incidence of spinal anesthesia-induced hypotension in patients undergoing a cesarean section. Literature Review: The major findings on all reviewed studies demonstrate the

efficacy of intraoperative prophylactic ondansetron administration in decreasing spinal anesthesia induced hypotension in parturient undergoing cesarean section. Project Implementation: Patients were given 8 mg of ondansetron 5 minutes prior to spinal anesthesia, with co-loading of 1L Lactated Ringer's solution. Blood pressure was measured and documented every 3 minutes, for the first 30 minutes of the procedure. Results: Thirty patients scheduled for elective cesarean sections were recruited to participate project. All were parturients with a singleton pregnancy at term (> 37 weeks) undergoing elective cesarean delivery. The results show a median for the mean artery pressure of the participants of 77 mmHg 3 minutes after spinal anesthesia administration. The rest of values until 30 min after spinal anesthesia administration were consistent with the initial values. Practice Implications: This project presents anesthesia providers with a safe, evidence-based approach that contribute to maintain hemodynamic stability in patients undergoing cesarian sections. Minimizing complications associated with hypotension, thereby improving maternal outcomes. IRB # 22100030023

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Design and Synthesis of 3,6-Dibromocarbazole Derivatives as Anti-Cancer Agents

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Background/Objectives: During this study, we synthesized new 3,6-dibromocarbazole derivatives and analyzed their cytotoxic and anti-migratory activity against the highly metastatic MDA-MB-231 breast cancer cells. Wikostatin, a 3,6-dibromocarbazole derivative, is a N-WASP inhibitor. Unfortunately, a recent study attributed inhibition of other cellular functions that are not N-WASP dependent to Wikostatin. In our hypothesis, compounds containing a hydrophobic aromatic group with an elongated aliphatic polar segment will potentiate the molecule's interaction with N-WASP. Recently, we designed and synthesized a series of carbazole-derived compounds (Series A, B, and C), demonstrating anti-proliferative and anti-migratory activity on the MDA-MB-231 cell line. Methods: Series A compounds were synthesized to obtain carbazole amide derivatives via substitution and hydrolysis reactions. Series B and C compounds were synthesized via the Strecker synthesis. All compounds were analyzed for their cytotoxic and anti-migration activity in MDA-MB-231 cells using a Sulforhodamine B assay and wound-healing assay, respectively. The effect of compounds from Series A in the extension of protrusive structures was evaluated by fluorescence microscopy. Results: Our preliminary investigations demonstrated that several compounds have moderate antiproliferative effects on cancer cell lines with 4.7–42 µM GI50 values. Carbazole derivatives of Series A inhibit the migration activity of MDA-MB-231 cells by 18–20%. The effect of compounds 10, 14, and 15 in filopodia and invadopodia extension was evaluated by fluorescence microscopy. The results demonstrated a strong reduction in actin-based cell extensions by compounds 10 and 15. Series B and C compounds demonstrated moderate antiproliferative effects on MDA-MB-231 cells with a range of 27-42 µM GI50 values. Conclusions: Series B and C agents should undergo further evaluation to elucidate their anti-migratory effects. Novel compounds must be designed for the optimization of 3,6-dibromocarbazole derivatives. Acknowledgments: We acknowledge the support provided by CAPAC (Award Grant Number#R25CA240120) from the NCI and MBRS-SCORE NIH/NIGMS SC2GM116712.

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Level of knowledge about delirium in nursing staff on an Intensive Care Unit: Descriptive study

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Background & Objective: Delirium represents one of the prevalent organ dysfunctions among critically ill patients. Due to its high prevalence

and its association with negative outcomes, its early identification and management is a priority. Nursing staff is essential in diagnosing delirium; however, the early identification depends mainly on the level of knowledge of the nursing staff. The study aims were to explore the basic knowledge of nursing personnel in an intensive care unit (ICU) on the delirium phenomenon and the association between knowledge and demographic characteristics. Methods: Descriptive study was conducted in one of the ICUs in Puerto Rico. Forty-three nurses of the Medical ICU completed the Knowledge and Attitude of Intensive Care Unit Nurses towards Delirium. Results: The mean age of the nurses was 41.5 ± 9.3 years with a mean of 12.2 ± 7.4 years of work experience in ICU. Approximately 7% of the nurses had an associate degree, 81% bachelor's degree, and 12% master's degree. Most nurses (84%) have attended critical care courses. The main sources of delirium knowledge were personal study (41%) and workshops (41%). The majority (70%, n=27) showed a good level of knowledge about delirium, and 30% (n=16) had a moderate level of knowledge. Nonetheless, in specific questions related to pathophysiology, assessment, and risk factors of delirium, nurses rated lower scores. We did not find significant association between knowledge and demographic characteristics, probably due to the small sample size. Conclusions: Although nurses have a general knowledge of delirium, specific areas still need to be addressed. It is important to continue educating nursing and other health professionals regarding delirium and to develop new studies with larger sample aimed at exploring educational strategies, the impact of education on staff competencies on the prevention, management, and identification of delirium.

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#CuidoMiSaludSexual: Educación en salud sobre salud sexual para jóvenes

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Trasfondo y objetivos: En Puerto Rico, los/as jóvenes reciben limitada educación sexual a través del sistema de educación pública, entidades privadas, cívicas y por parte de los/as profesionales en el campo de la salud. Se necesita información oportuna y desde una perspectiva de derechos humanos que facilite tomar decisiones informadas sobre salud sexual y reproductiva. En abril de 2021 el Programa de Planificación Familiar Título X (Prevén) realizó una encuesta en línea entre jóvenes de 16-21 años para conocer sus necesidades e intereses en cuanto a salud sexual. Un total de 63 jóvenes participaron. Los temas de mayor interés fueron métodos anticonceptivos (74.6%) y enfermedades de transmisión sexual (63.5%). Método: Se diseño e implantó la campaña de educación sexual #CuidoMiSaludSexual mediante la creación y publicación de contenido para las redes como parte de los esfuerzos del Mes de Prevención de Embarazos y Salud en Jóvenes. La selección de temas y el nombre de la campaña se hizo a través de consulta con jóvenes. Se compartió el contenido a través de las redes sociales de Facebook e Instagram de Prevén. Resultados: Se desarrollaron siete contenidos educativos en salud sexual para las redes sociales incluyendo: imágenes, textos y videos alusivos a salud sexual. Se abordaron temas de: relaciones saludables, sexualidad responsable, relaciones positivas familiares, métodos anticonceptivos, infecciones de transmisión sexual, diversidad sexual y consentimiento. Conclusión: Los asuntos de salud sexual,son asuntos de salud pública. Ante la coyuntura sociopolítica en la que nos encontramos donde existen múltiples barreras de acceso entre ellas: dificultades económicas, falta de educación, carencia de servicios, estigmatización, entre otras se hace necesario la inversión y promoción en la salud sexual y reproductiva. Las redes sociales constituyen una herramienta fundamental para diseminar información correcta y oportuna sobre salud sexual. Reconocimientos: Ninguno.

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Consecuencias en la calidad de vida de niños(as) y personas gestantes afectadas por zika en tiempos de SARS COVID 19: Un estudio cualitativo en Brasil, Colombia y Puerto Rico.

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Trasfondo y objetivos: El mosquito Aedes, vector del virus del Zika fue identificado por primera vez en América Latina a principios del 2015; el contagio en personas gestantes y fetos impactó la vida de las familias afectadas. Cinco años más tarde de esta epidemia, las familias fueron impactadas nuevamente por la pandemia de COVID-19. Este estudio busca identificar los cambios provocados por el COVID-19 en la estructura familiar, cuido del niño (a), acceso a servicios de salud, salud emocional de los cuidadores (as) y familiares ya afectados por el zika. Metodología: Se realizaron entrevistas virtuales a personas que estuvieron embarazadas durante la epidemia de zika con y sin hijos (as) afectados por el virus; y embarazadas en la actualidad (2020) en Brasil (n = 40), Colombia (n= 25) y Puerto Rico (n = 37). El análisis se llevó a cabo con ayuda del programa cualitativo Dedoose, dónde se extrapolaron las citas más relevantes. Resultados: Debido a la nueva realidad, las familias previamente afectadas por el virus del zika demostraron mayores cambios en la economía familiar, falta de apoyo, dificultad en la búsqueda de cuido o escuelas para niños(as) con efectos adversos, limitaciones en acceso a los servicios de salud y terapias; estos cambios provocaron incertidumbre en las familias, aumentando el estrés y/o ansiedad en las madres. Conclusión: Se concluye que los cambios en el sistema de salud y en el acceso de los servicios ofrecidos pueden provocar impactos en la calidad de vida familiar; dicho impacto es mayor en familias previamente afectadas por el virus del zika. Agradecimientos: A Roxanally Carrasquillo y María Román por fungir como entrevistadoras. Al Department of Reproductive Health and Research, Human Reproduction Programme, WHO (DFID-68564) y National Institute of Dental and Craniofacial Research (R21DE027235), por su financiamiento.

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Desafíos de tener bebés o niños (as) afectados (as) por ZIKV: Un estudio cualitativo en Brasil, Colombia y Puerto Rico.

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Trasfondo y objetivos: La epidemia del Zika ha existido por muchos años en Asia y África. No fue hasta el 2015 que se notificó el primer caso de zika en las Américas. En ese entonces, no se conocían los posibles riesgos y consecuencias del virus en las personas gestantes y fetos. El objetivo principal de este estudio es identificar los desafíos enfrentados por los cuidadores(as), familiares y niños(as) afectados por el virus en Brasil, Colombia y Puerto Rico; con el propósito de mejorar la comunicación médico-paciente al momento de informar los riesgos y posibles consecuencias en epidemias futuras. Metodología: Se realizaron entrevistas virtuales a personas que estuvieron embarazadas durante la epidemia de zika con y sin hijos(as) afectados por el virus; y embarazadas en la actualidad (2020) en Brasil (n= 40), Colombia (n=25) y Puerto Rico (n=37). El análisis se llevó a cabo con ayuda del programa cualitativo Dedoose. Resultados: La magnitud de los desafíos enfrentados impactó la salud materno infantil; sin restarle importancia al impacto provocado en el padre, hermanos(as) y demás miembros(as) de la familia extendida. En los tres países, los desafíos dependieron principalmente de la comunicación médico-paciente, economía familiar, cuadro médico del niño(a) y apoyo externo e interno; estos influencian el habla, lenguaje y aprovechamiento académico del niño(a), y calidad de vida familiar. Conclusión: Los desafíos enfrentados durante la etapa prenatal, postparto y actualidad (2020) influyeron en la calidad de vida familiar. Algunos desafíos presentes en las experiencias de las participantes pudieron evitarse y/o disminuir su intensidad de haber recibido

una comunicación médico-paciente empática y eficiente. Agradecimientos: A Roxanally Carrasquillo y María Román por fungir como entrevistadoras. Al Department of Reproductive Health and Research, Human Reproduction Programme, WHO (DFID-68564) y National Institute of Dental and Craniofacial Research (R21DE027235), por su financiamiento.

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Antibiotics disturb immune and microbial cell infiltration in HPV+ oropharyngeal tumors

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Head and neck squamous cell carcinomas (HCSCC) are derived from mucosal epithelia in the oral cavity, pharynx, and larynx, and over 70% of oropharyngeal carcinomas are associated with the human papillomavirus (HPV). Treatment consisting of anti-programmed death-1 (PD-1) has brought a better clinical outcome but, more than 50% of patients do not respond to treatment. As part of the treatment, broad-spectrum antibiotics are used to prevent infections during surgery. The use of antibiotics alters microbial diversity which may affect patient survival and responses to treatment. The oral cavity hosts approximately 700 bacterial species involved in maintaining oral health and has been associated with HNSCC. This study aims to determine the immune and microbial responses during anti-PD-1 monotherapy combined with antibiotics. Methods: We will use a preclinical murine model where an HPV+ oropharyngeal cancer cell line named mEER is implanted in the tongue of mice and they are treated with or without antibiotics and/or anti-PD-1. First, we analyzed bacterial changes associated with tumor development in the tongue. Also, we quantified different immune cell types between the different groups of mice by flow cytometry. Results: We observed the oral cavity with tongue tumors showed a higher abundance of Staphylococcus compared to the oral cavity of healthy mice. In contrast, healthy mice had a higher abundance of Pseudomonas and Cloacibacterium. Interestingly, we found that antibiotic treatment decreased dendritic cell infiltration and CD4+ T cell activation in lymph nodes as well as decreased CD8+ T cell infiltration in the tumors. Antibiotics did not affect immune cell infiltration in anti-PD-1 treated mice. Conclusions: Tumor development affects the microbial composition in the oral cavity. Also, antibiotics affect immune cell infiltration associated with immunosuppression. There is a possibility that the anti-PD-1 immunotherapy is counteracting the effects of the antibiotic in mice. Acknowledgments: We thank Dr. Paola Vermeer, for kindly providing the HPV+ mEER cell line. We thank Dr. Yamil Gerena for providing access to the FACSCelesta flow cytometer.

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Adherencia a terapia de medicamentos en adultos mayores en una comunidad del municipio de San Juan: Proyecto piloto

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Trasfondo y objetivos: Adherencia a terapia de medicamentos se define como tomar los medicamentos de acuerdo con la dosis, el programa prescrito y la persistencia de tomar la medicación a lo largo del tiempo. Los adultos mayores, quienes sufren de múltiples afecciones comórbidas y usan más medicamentos que personas más jóvenes, a menudo no se adhieren a los medicamentos prescritos, lo que puede llevar a consecuencias

clínicas y efectos no deseados. Este estudio pretende describir la adherencia a terapia de medicamentos en adultos mayores. Metodología: Se realizó un estudio transversal usando entrevistas personales entre 40 residentes de la comunidad Santa Rita, San Juan. Se utilizó la escala ARMS para medir el nivel de adherencia y pruebas de Ji-cuadrado o Fisher para comparar proporciones. Resultados: El 62.5% de los entrevistados fueron mujeres. La edad promedio fue de 70.0-±7.9 años. El 50.0% de adultos mayores que reportaron usar medicamentos usan entre 1 y 6 medicamentos. El 53.8% de los adultos mostró una alta adherencia a su terapia de medicamentos, siendo dicha adherencia similar (p>0.05) en hombres (53.3%) y mujeres (54.2%). El 87.5% tiene al menos una condición médica que afecta potencialmente la adherencia, 94.1% de los cuales presentan una baja adherencia a su terapia de medicamentos. Conclusiones: La adherencia de los adultos mayores, tanto hombres como mujeres, sugiere que éstos tienen algo de conocimiento sobre la importancia de adherirse a sus terapias de medicamentos. Esta información ayudará a implantar métodos y estrategias de educación en salud y prevención a la no adherencia. Agradecimientos: Los autores agradecen a la Organización SFM Charities, a CAUCE y a la Junta Comunitaria del Casco Urbano de Río Piedras su colaboración con este proyecto. Aprobado por IRB: Protocolo #6570122

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Factores asociados a la mortalidad en pacientes adultos con diagnóstico de COVID-19 en una unidad de cuidado intensivo en Puerto Rico

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Trasfondo y Objetivo: El COVID-19 ha impactado la mortalidad en Puerto Rico y alrededor del mundo. El objetivo del estudio fue identificar los factores asociados a la mortalidad en pacientes con diagnóstico primario de COVID-19 admitidos en una Unidad de Cuidado Intensivo (UCI) de un hospital del área metropolitana en Puerto Rico. Método: Estudio descriptivo correlacional. Se recopilaron datos sociodemográficos y clínicos retrospectivamente en expedientes de 78 pacientes admitidos entre el 1 de abril de 2020 al 30 de diciembre del 2021. Resultados: El 56.4% de los pacientes eran masculinos con una mediana edad de 70.5 (RIQ, 57.8-76.3). El 86% tenía alguna comorbilidad, 83% requirió ventilación mecánica invasiva con una estadía en la UCI de 11.0 (RIQ, 6.0-16.25) días. La mortalidad fue de 83.3%. En un modelo de regresión logística (n= 62) encontramos que: (1) aquellos pacientes vacunados contra el COVID-19 en comparación con los no vacunados tuvieron 91.2% menos probabilidad de fallecer (OR= 0.088; 95% CI, 0.013-0.572), (2) aquellos que requirieron ventilación mecánica invasiva comparado con los que requirieron otro tipo de suplemento de oxígeno fueron 7.6 veces más propensos a fallecer (OR= 7.6; 95% CI, 1.13-51.41), (3) aunque los pacientes que desarrollaron complicaciones estuvieron más propensos a fallecer, no se alcanzó significancia estadística (OR= 11.4; 95% CI, 0.99-131.12, p= 0.051). En el análisis bivariado los pacientes admitidos en el año 2020 (p= .03) y que se le administraron vasopresores (p< .001), en términos porcentuales, fallecieron más. Estas variables no se incluyeron en la regresión por posible multicolinealidad con otras variables. Conclusión: El estar no vacunado y requerir ventilación mecánica invasiva se identificaron como factores asociados a la mortalidad. Éstos pueden ayudar a la identificación temprana de pacientes con mayor riesgo a fallecer. Sin embargo, se necesitan estudios con una muestra mayor para confirmar estos hallazgos.

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Promoviendo la equidad en salud mediante estrategias de educación alternas de alfabetización en salud

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Trasfondo y Objetivos: Promover la equidad en salud es una labor esencial en la práctica de todo profesional de la salud pública. Esto cobra mayor importancia en la prestación de servicios de salud esenciales a la población vulnerabilizada en Puerto Rico. Se identificó la necesidad de realizar actividades de capacitación y desarrollar material educativo para el personal del Departamento de Salud que atiende entidades y organizaciones que ofrecen dichos servicios. Método: De marzo a junio de 2022 se revisó literatura sobre alfabetización en salud, equidad en salud y estrategias alternas de educación. También se analizaron materiales de capacitación, presentaciones virtuales y videos educativos. A partir de los objetivos establecidos por CDC para la equidad en la salud ante el COVID-19, se desarrollaron unos recursos educativos que fueron revisados por cuatro expertas. Resultados: Se crearon tres recursos para el desarrollo de capacitación profesional desde una perspectiva de equidad: un plan educativo y su manual para el taller/conversatorio y dos materiales educativos sobre estigma y prejuicio hacia las personas adultas mayores. En el piloto de la intervención participaron 14 profesionales mediante ejercicios sobre los prejuicios y el estigma social, además de la aplicación de 5 estrategias alternas de educación. Los materiales educativos para personas adultas mayores estuvieron dirigidos a desmitificar la idea de la vejez como una etapa negativa de la vida. Las personas participantes valoraron las estrategias alternas como útiles para aplicar en su práctica profesional. Conclusión: Una perspectiva equitativa en salud permite trabajar de forma consciente a partir de las necesidades de la población de interés. Además, promueve una mayor receptividad por parte de la población. La capacitación profesional y los recursos de apoyo contribuyen a compartir conocimiento, recibir retrocomunicación y posibilitan la adaptación y aplicación de lo aprendido según sea necesario para las y los profesionales. Fuentes de financiación: CDC-RFA-OT21-2103: National Initiative to Address COVID-19 Health Disparities Among Populations at High-Risk and Underserved, Including Racial and Ethnic Minority Populations and Rural Communities.

4449

Identify the support needs mentioned by a group of obstetricians and gynecologists to care for pregnant women with opioid use disorder in Puerto Rico.

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Background & objective: Opioid use during pregnancy has become a public health problem in the United States. According to the American Society of Addiction Medicine, the use of drugs such as tobacco, alcohol and illicit substances during pregnancy is considered risky for the mother and fetus, requiring comprehensive treatment of the biopsychosocial complexity of addiction. Puerto Rico lacks information of the extent to which opioid use during pregnancy is identified and treated and the needs of obstetricians/gynecologists to care for pregnant women with opioid use disorder (OUD). The purpose of this study is to identify the support needs of obstetricians/gynecologists to care for pregnant women with OUD in Puerto Rico. Methods: An anonymous survey was distributed to practicing obstetricians/gynecologists recruited through the specialty academic programs and a professional organization with the total of 57 responses. Survey questions explored experiences caring for pregnant women with a substance use disorder and the support needs required to provide evidence based care. Results: Of the total respondents, 64.9% were practicing obstetrics and 71.9% in a private practice, follow by 35.1% in academic medical centers. The majority of respondents practiced in the Ponce health region (50.9%). The total of 78.6% mentioned lack of knowledge or limited availability of effective treatment services in Puerto Rico to refer pregnant women with OUD, while 51.8% mentioned possessing limited knowledge about the subject as a limitation to care for pregnant women with opioid use disorder.

Conclusions: Our results show that there is a need to increase the support of obstetricians/gynecologists that care pregnant women with opioid use disorder in Puerto Rico. Recommendations to address this gap in obstetric practice will be shared. Acknowledgements: "This research report was founded by the National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health under award number U54GM133807. The contents are solely the authors' responsibility and do not necessarily represent the official views of the National Institutes of Health." IRB Protocol: A0070221.

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Clinical and Radiographic Outcomes in Patients Diagnosed with Primary Avascular Necrosis of the Humeral Head

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Background & Objectives: The purpose of this study was to assess radiographic outcomes in a patient population with primary diagnosis of avascular necrosis (AVN) who underwent anatomic or reverse shoulder arthroplasty surgery. We hypothesized that this population of patients would show radiographic signs of non-anatomical implant reconstruction or joint "overstuffing" on the post-operative radiographs and this phenomenon would be implant dependent. Methods: This was a retrospective review of a single, high volume surgeon database between 1999 and 2020. All patients had confirmed diagnosis of primary AVN of the humeral head, and existing preoperative and postoperative imaging. Shoulders were categorized as overstuffed or matched/understuffed by comparing humeral head implant fit adequacy measured on Grashey AP radiographs by using previously described best fit circle method. The lateralization of the humeral head (lateral humeral offset (LHO)) was quantified on preoperative, post-surgical (1-2 weeks), and final follow up (min.2years) radiographs. Results: 57 shoulders (51 patients) were included: 30 underwent Hemiarthroplasty (HA), 24 Total Shoulder Arthroplasty and 3 Reverse Shoulder Arthroplasty (RTSA). Shoulders were categorized as overstuffed in 20% of HA, and 47.8% of TSA. Reconstruction utilizing TSA showed significant relationship with implant overstuffing ($p=0.03$). The mean LHO for patients at preoperative visit, post-surgical and final follow up was 10.1mm±5.9mm, 12.9mm±5.7mm, 13.0mm±7.1mm, respectively. There was a statistically significant difference between preoperative LHO and both LHO at post-surgical and final follow up ($p<0.01$, $p=0.013$). There was no significant difference between LHO at immediate follow up and final follow up ($p=0.9$). A total of 6 shoulders underwent revision with 4 shoulders categorized as overstuffed. Conclusion: Understanding surgical options for the AVN reconstruction and their post-operative specifics is crucial for pre-surgical planning and to mitigate patient expectations. All reconstructions increased humeral offset, with only 32% showing signs of non-anatomical reconstruction. Implant overstaffing was present in 67% of revisions. Acknowledgements: None.

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Condiciones de salud de las personas de edad mayor PREHCO Envejecimiento en Puerto Rico Seguimiento del Proyecto PREHCO

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El proyecto Condiciones de salud de las personas de edad mayor conocido por PREHCO (Puerto Rican Elderly Health Conditions) es representativo de la población de 60 años o más que residían en sus hogares en 2000. Se diseñó para recoger información de calidad para estudiar los principales aspectos que afectan la salud de estas personas. PREHCO es un estudio longitudinal que ha completado su tercera fase y está próximo a iniciar la cuarta. Los objetivos principales de la primera y segunda vueltas fueron: Validar un minimental para adultos puertorriqueños de 60 años o más con bajo nivel de escolaridad. Hacer proyecciones de riesgos de morbilidad y

mortalidad. Analizar las transiciones para este grupo de población y sus condicionantes. En la tercera y cuarta vuelta se hace énfasis en: Examinar los predictores biopsicosociales: salud cognitiva, niveles de cortisol, salud mental, discapacidad y mortalidad de 16 a 20 años después de la primera entrevista. La cuarta ronda pretende auscultar las asociaciones transversales entre los factores estresantes, los que mejoran la resiliencia, el estrés percibido, el cortisol y la salud, así como los cambios en la salud dos años después. Igualmente pretende aumentar la utilidad de PREHCO para futuras comparaciones interculturales y análisis genéticos. En este trabajo se presentarán las características del proyecto, la metodología utilizada, el contenido de cada fase, las diferencias y particularidades entre éstas. PREHCO se basó en una muestra estratificado por conglomerados, polietápico. Se visitaron más de 30,000 viviendas para obtener 4291 participantes. En la segunda ronda se entrevistaron 3165. Cerca de 15 años después, para la tercera ronda se localizaron 86% de los 1299 que se presumieron vivos después de haber consultado el registro demográfico. Para la cuarta ronda se volverá a entrevistar a los que participaron en la tercera, a través de un proxy si hubieran fallecido.

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Long-term Cognitive and Psychological Outcomes in Puerto Rican COVID-19 Survivors

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Background & Objective: Inflammatory response found in COVID-19 infection induces neuroinflammation, resulting in cognitive decline. Survivors from previous severe acute respiratory syndrome outbreaks have exhibited symptoms of depression, anxiety, post-traumatic stress disorder (PTSD), and neurodegenerative diseases. We aimed to determine the epidemiology of cognitive impairment, PTSD, anxiety, and depression of COVID-19 survivors who were hospitalized in Puerto Rico. Methods: Observational research study. Phone interviews of 145 COVID-19 survivors were conducted approximately six months after hospital discharge using cognition and emotional screening tests. Demographic and clinical data were obtained retrospectively from medical records. Results: The majority were female (50.3%) with a median age of 53 (IQR, 46- 62), and 58% had an associate degree or less education level. Hospital length of stay was 8 (IQR, 5- 11.5) days, 10.3% were admitted to ICU, and 70% of all patients had at least one hypoxemic event during hospitalization. Pre-COVID cognitive changes, PTSD, and depression-related symptoms obtained through self or family reports, or record review were 8.3%, 1%, and 23.4%, respectively. Survivors presented mild (60%) and moderate (11%) cognitive impairment using the Montreal Cognitive Assessment-Blind. Emotional tests showed an occurrence of PTSD classified as borderline at 7% and probable at 24%. Anxiety-related symptoms classified as borderline abnormal were 19%, and abnormal were 16%, while depression-related symptoms classified as borderline abnormal and abnormal were 14% and 9%, respectively. Conclusions: This study confirms what is established in literature about cognitive and emotional changes in many patients who survive COVID-19. In our sample, depression was reported higher prior to COVID-19 than was obtained after COVID-19. This could occur since Puerto Rico has experienced several natural disasters and economic crises in the years before COVID-19, which may explain why people reported being depressed. In addition, both measurements of depression were obtained from different methods, which is a limitation. IRB# A5580220

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Una Salud: Salud global vinculante y aplicable a las relaciones humanas, animales y medio ambientales.

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Política Pública Analizada: Se analiza el documento "One Health" (Una Salud), de FAO, UNEP, WHO y WOAH/OIE para prevenir, responder efectivamente y proponer acciones sostenibles ante los problemas de salud global que resultan de las relaciones humanas, animales y medio ambientales. Disciplina o teoría: Se consideran los modelos Ecológicos y de Creencias de salud para explicar el comportamiento humano y proponer acciones más cohesivas y sostenibles que busquen salvaguardar los recursos y la salud. Fuentes de información: Se vinculan los supuestos del documento Una Salud con los Objetivos de Desarrollo Sostenible (ODS) y el Plan Estratégico del Departamento de Salud de Puerto Rico (DSPR), 2020-2025. Método: Se identifican las problemáticas, argumentos y acciones más sobresalientes de Una Salud sobre salud ambiental, salud animal y salud humana y sus implicaciones para la salud global. Se compara con las propuestas de los ODS 2030 y con los objetivos y acciones planteadas en el Plan Estratégico del DSPR, 2020-2025. Hallazgos: La falta de estrategias y políticas públicas sostenibles ha impactado la salud general y creado problemáticas de: sobreexplotación ambiental, pobre cuidado y control de las poblaciones animales, y falta de hábitos saludables. El surgimiento y descontrol de enfermedades endémicas y no endémicas, y zoonóticas, asociadas al desarrollo de epidemias y pandemias como el COVID-19, son consecuencias evidentes. Hay un impacto recíproco con la escasez, uso desmedido y contaminación de recursos naturales como el agua potable, el aire y las siembras. Implicaciones: Las problemáticas en la flora y fauna tienen implicaciones nocivas a la salud que sobrepasan generaciones. Los documentos normativos estudiados son indispensables para la evaluación, anticipación, preparación y mantenimiento de estrategias que promuevan una salud global interrelacionada y aplicable a los tres sectores influyentes: humano, ambiental y animal. La interdisciplinariedad e intersectorialidad pueden viabilizar acciones sostenibles, eficientes y efectivas.
Reconocimientos: Ninguno.

4455

Roles de género: Experiencia de acoso sexual en hombres Terapeutas Físicos y Asistentes de Terapeutas Físicos por parte de pacientes o acompañantes

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La terapia física es una profesión de contacto físico, por parte del terapeuta físico (TF) hacia el paciente, con el propósito de proveer el tratamiento adecuado.1 Investigaciones previas sustentan que los y las TF reportan ser víctimas de acoso sexual, o comportamiento no apropiado por parte del paciente.1 Los hombres pueden ser víctimas de acoso sexual, pero "debido a la construcción social de los roles de género los hombres no conciben de la misma manera el acoso sexual".2 Los objetivos del estudio fueron: · Explorar y analizar las definiciones que tienen los hombres TF/ATF sobre los roles de género asociados a la masculinidad hegemónica. · Indagar cómo los roles de género asociados a la masculinidad hegemónica median la relación profesional del hombre TF/ATF y el/la paciente y su experiencia con el manejo del acoso sexual por parte del/de la paciente o acompañante. Es estudio fue aprobado por el IRB [Protocolo # B1470122] y luego se entrevistó a ocho hombres licenciados en TF, con experiencias de acoso sexual y que trabajan en Puerto Rico. Se realizó un análisis fenomenológico de las experiencias y cómo ellos describen e interpretan los significados del acoso sexual. Una de las categorías identificadas fue las estrategias para manejar el acoso sexual. Los participantes verbalizaron lo siguiente: "Le dije que no vuelva a pasar" [Participante 2] "...No le das mayor importancia al asunto... No le di mayor relevancia al asunto" [Participante 1]. Los hombres que experimentan acoso sexual optan por confrontar la situación enfrentando al paciente/acompañante o ignorándoles. En conclusión, la construcción social de la masculinidad hegemónica influye en la forma en que estos lidian con el acoso sexual. Las autoras quieren agradecer a la Asociación Puertorriqueña de Fisioterapia por colaborar en el reclutamiento de los participantes y a la Dra. Nancy R. Kirsch por la

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4456

Program for Recovery Opportunities with Integrated Treatment (PORTI): First Program in Puerto Rico for individuals with a First Episode of Psychosis

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Introduction: The Program for Recovery Opportunities with Integrated Treatment (PORTI in Spanish) is a project founded in 2015, the first of its kind in Puerto Rico, for people aged 16 to 35 who have experienced FEP (e.g. unusual thoughts and behaviors or audiovisual hallucinations)1. The program is affiliated with the Department of Psychiatry of the University of Puerto Rico Medical Sciences Campus. PORTI focuses on FEP patients through evidence-based therapy. Participants receive employment assessment, academic counseling, pharmacotherapy, psychoeducation, and group and family therapy. The main purpose is to improve functionality and communication, reduce psychiatric hospitalizations, and manage symptoms. Methods: PORTI is based on the On Track NY model 1. The model utilizes the Structured Clinical Interview, Clinician-Rated Dimensions of Psychosis Symptom Severity, Beck Depression Inventory, Beck Anxiety Inventory, Colorado Symptom Index, Lehman Quality of Life, Columbia Suicide Assessment, MIRECC- Global Assessment Functioning, Global Functioning, and Brief Psychiatric Rating Scale. PORTI is composed of a social worker, research fellow, peer specialist, education and employment specialist, psychiatrists, and psychologists. Interventions include case management, individual, family, and group therapy, pharmacotherapy, and support in education and employment. Results: Since 2015, PORTI has managed 73 participants with 22 currently active. 59% are male and 49% female. 41% of participants have achieved successful employment, 31% began education, 86% are on pharmacotherapy, and 100% have participated in individual, family, and group therapy. The most common diagnoses are 45% Schizophrenia and 54% Schizoaffective. The mean age of onset is 26 years old. 66% of participants have successfully completed the three-year program. Conclusions: PORTI provides outpatient psychosis management while achieving its goal of increased functionality and reduced inpatient hospitalizations. Future directions include expanding the professional team, further research projects, increasing the recruitment of participants, and continuing to be a model and consultant for additional FEP Programs across Puerto Rico. Acknowledgments: We would like to thank the administrative staff, psychiatry residents, psychology interns, research fellows, and students at the University of Puerto Rico Program for Recovery Opportunities with Integrated Treatment (PORTI) for the recruitment, management, and treatment of participants, administration of questionnaires, and effective teamwork. Affiliations: 1: The University of Puerto Rico, Medical Sciences Campus School of Medicine Department of Psychiatry. References: Bello I, Lee R, Malinovsky I, Watkins L, Nossel I, Smith T, Ngo H, Birnbaum M, Marino L, Sederer LI, Radigan M, Gu G, Essock S, Dixon LB. OnTrackNY: The Development of a Coordinated Specialty Care Program for Individuals Experiencing Early Psychosis. Psychiatry Serv. 2017 Apr 1;68(4):318-320. doi: 10.1176/appi.ps.201600512. Epub 2016 Dec 15. PMID: 27973999; PMCID: PMC5846122.

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Case report and literature of Ludwig's Angina in the second trimester of pregnancy

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Purpose: Women in pregnancy have a predisposition to various infections that can quickly become fatal. Ludwig's angina is a rapidly spreading infection that involves the submandibular, submental and sublingual spaces. It often occurs after infection of a mandibular tooth. The growth can obstruct the airway, causing respiratory difficulty making this diagnosis potentially fatal. Careful monitoring and rapid intervention are warranted, when facing such an infection. Case description: Here we describe the case of a 29-year-old female with an intrauterine pregnancy at 24 weeks of gestation that developed a Ludwig's angina after the extraction of a right mandibular molar tooth. She presented with molar pain, fever and mandibular abscess that progressed causing problems with swallowing and speaking clearly. With quick response to the signs and symptoms of Ludwig's angina, steps can be taken such as proper antibiotic treatment to ensure clearance of infection and protection of airway. Conclusion: Patients who present with this type of infection are at risk of systemic illness leading to infection of the fetus. This is one of the few reported cases of this disease occurring during the second trimester of pregnancy. This case report and literature review will highlight the importance of oral hygiene as routine care during pregnancy. Acknowledgements: None.

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Exploring changes in eating patterns as a result of the earthquake that occurred on January 7, 2020 in Puerto Rico and its effect on diabetes control in people 21 years of age or older residing in Guánica

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Background & Objectives: Since the end of 2019, Puerto Rico has experienced considerable seismic activity and the municipality of Guánica was one of the most affected. To the best of our knowledge, this is the first epidemiological study that evaluated the effects of earthquakes on the management of diabetes among residents of Puerto Rico. The general objective of this research was to explore if there were changes in eating patterns as a result of the earthquake that occurred on January 7, 2020, that could affect the control of diabetes in people 21 years of age or older in Guánica. Methods: A cross-sectional study using personal interviews was conducted with 87 participants recruited through availability sampling. Of these, 27 were people with a clinical diagnosis of diabetes prior to the time of the earthquake. They were classified according to their diabetic status, as controlled or uncontrolled after the earthquake. An indicator to classify people with the type of change in food patterns was constructed based on data collected through a semiquantitative food frequency questionnaire. Results: Most of the people with diabetes indicated that their age was 65 years or older (63.0%) and that they were female (77.8%). Among those classified as uncontrolled diabetics, none reported a negative change in their eating patterns during risk period (after the earthquake). Nonetheless, five of them had a positive change or no change in their eating patterns during the same period. Conclusions: The findings of this research suggest that people with diabetes who are aware regarding the management of their condition, even when an atypical event such as an earthquake occurs, can perform good management and control of it. Acknowledgements: We appreciate the effort and willingness of the community leaders and study participants. The authors declare no conflict of interests.

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The Use of Topical Imiquimod for Isolated Cutaneous Langerhans Cell Histiocytosis in an Infant

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Purpose: Langerhans cell histiocytosis (LCH) is an inflammatory neoplasm of myeloid-lineage progenitor cells that affects various organs, most commonly the bones. Skin involvement, seen in approximately 30% of cases, is almost always associated with systemic involvement, and hence a worse prognosis. Isolated cutaneous LCH (IC-LCH) is a subtype of this disease, in which the skin is the only organ affected. This rare phenomenon occurs in only about 2% of cases and is associated with a better prognosis as it lacks any systemic involvement. Although currently there is no established protocol for treating isolated cutaneous LCH, some treatment modalities are used producing varying results in the clearance of the lesions. These treatment options include topical corticosteroids, nitrogen mustard and phototherapy. Topical imiquimod, a Th-1 response modulator, has shown promising results when treating cutaneous LCH in children and adults, although not a lot of data is currently described in literature. Case description: We present the case of a four-month-old female who presented to the dermatology clinic with a rash in her neck, axillae, and inguinal folds of two months of duration. Previously misdiagnosed as more common rashes seen in children, the patient had failed previous treatment. After the diagnosis was confirmed as Langerhans cell histiocytosis, the patient was given topical corticosteroids without resolution of symptoms and, subsequently, did not tolerate tacrolimus. The patient was then given topical imiquimod and the lesions resolved and have not recurred up to date. Conclusion: We believe our case illustrates LCH as a challenging diagnosis to make and augments the evidence that supports topical imiquimod as a treatment option for this disease. Acknowledgements: None.

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Condiciones de salud de las personas de edad mayor PREHCO. Envejecimiento en Puerto Rico Seguimiento del Proyecto PREHCO

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Introducción: El proyecto Condiciones de salud de las personas de edad mayor conocido por PREHCO (Puerto Rican Elderly Health Conditions) es un estudio longitudinal representativo de la población de 60 años o más que residían en sus hogares en 2000. Se diseñó para recoger información para documentar los aspectos que afectan la salud de este sector de la población. PREHCO completó su tercera fase y está próximo a iniciar la cuarta. Los objetivos principales de la primera y segunda vueltas fueron: Validar un minimental. Hacer proyecciones de riesgos de morbilidad y mortalidad, analizar las transiciones para este grupo de población y sus condicionantes. En la tercera y cuarta vuelta se hace énfasis en: Examinar la salud cognitiva, los niveles de cortisol, la discapacidad y la mortalidad de 16 a 20 años después de la primera entrevista. La cuarta ronda pretende auscultar los factores estresantes, los que mejoran la resiliencia, el estrés percibido, el cortisol y la salud. Objetivo: Este trabajo pretende adelantar algunos de los resultados de la recién concluida la tercera ronda. Metodología: PREHCO se basó en una muestra estratificado por conglomerados, polietápico. Se visitaron más de 30,000 viviendas para obtener 4291 participantes. En la segunda ronda se entrevistaron 3165. 15 años después, para la tercera ronda se localizaron 86% de los 1299 que se presumieron vivos después de haber consultado el registro demográfico. Para la cuarta ronda se volverá a entrevistar a los que participaron en la tercera, a través de un proxy si hubieran fallecido. Resultados: el 33.0% de las personas de 78 años o más viven solas, 4.6% están encamados, el 63.0 % piensa que tiene mejor salud que otras personas de su edad y 75.0% padece de hipertensión. Conclusiones: 59.1% descansa en que alguno de sus hijos pueda ayudarlo. 51.7% se considera algo religioso. Agradecimentos 1R01AG064769-01

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Role of Mechanical Loading in Mitochondrial Function and CypD Expression during Osteogenesis

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Background & Objectives: Mitochondrial function (MF) is critical for osteoblast development and bone production because it provides the most significant energy source through oxidative phosphorylation. Mitochondrial dysfunction (MD) has been linked to decreased osteogenic differentiation, mitochondrial DNA release, inflammation, catabolic pathways, and cell death. The mitochondrial permeability transition pore (MPTP) is formed when MD opens a pore in the inner matrix, lowering the membrane potential (MP) and raising reactive oxygen species. The mitochondrial protein Cyclophilin D (CypD) expression is directly correlated to MPTP activity. This project aims to investigate the effect of mechanical stress on MF and CypD expression during osteogenesis. Methods: Calvaria preosteoblasts cells (MC3T3-e1) were grown in the alpha-MEM medium for 48 hours before being exposed to fluid shear stress for 1 hour in a flow chamber with a 1.2 Pa closed flow loop and collected after 24 hours. For the cell analysis, RT-PCR was used to identify gene expression of Ppif (CypD) and Runx2 (osteogenesis), and cell staining was used to assess MF. To assess osteogenesis in the in vivo model, transgenic mice with CypD overexpression were stained using the Whole Mount Staining Technique. A two-way ANOVA was used to investigate the differences between in vitro sample measures and their interactions. A power analysis was performed on preliminary biomechanical data for n=14, 7 per group: α=0.05 and β ≤10%. A t-test for normal distribution differences and a non-parametric test for other distributions were utilized to compare two simple groups. Results: We found an upregulation of the Runx2 gene (p =0.0232), a downregulation of Ppif (p =0.0469), and a significant difference (p =0.0471) in mitochondrial MP in the experimental in vitro group. In vivo samples with CypD overexpression showed a higher presence of cartilage. Conclusion: Ultimately, mechanical stress induces MF by downregulating CypD expression during osteogenesis. Acknowledgements: This project was made possible through the University of Rochester Summer Scholars Program.

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La Experiencia de Violencia Obstétrica en Mujeres Adultas Puertorriqueñas: Un Estudio Fenomenológico desde una Perspectiva de Género

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Un estudio cualitativo que explora la experiencia de violencia obstétrica de 10 mujeres adultas puertorriqueñas. La violencia obstétrica es un fenómeno donde la mujer experimenta un trato irrespetuoso, abusivo y negligente, durante el cuidado prenatal, el parto o el posparto por parte de los profesionales con los cuales se atienden. Se utilizó un diseño cualitativo y un enfoque fenomenológico. Se aplicó el Modelo de Wolcott para el análisis de las narrativas. Las historias responden a partos entre las fechas del 2006 al 2016. De los hallazgos del estudio emergen tres categorías: silenciadas ante el poder, violencia institucional y "arrebato de una hermosa ilusión". Las categorías que emergen reflejan las secuelas a nivel fisiológico, emocional y psicológico como consecuencia de las prácticas y los procedimientos de los profesionales de la salud. Se concluye que la violencia obstétrica es el ejercicio del poder y control perpetuado por una cultura institucionalizada. La violencia ejercida provocó silencio, autodeterminación penalizada, desinformación e incertidumbre en las participantes del estudio durante su parto.

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Glyphosate Increases Anxiety-Like Behavior But Not Fear Behaviors

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Background and Objectives: Glyphosate is the most common active ingredient in herbicides used in landscaping and agriculture. Glyphosate is thought to be safe for humans and animals because it acts by inhibiting a metabolic route almost exclusive to plants. However, recent studies in rodents have shown that glyphosate can disrupt emotional states,

but its effects on anxiety-like and fear-like behaviors at a dose considered to be safe have not been evaluated. Therefore, we aimed to evaluate the effect of 2.0 mg/kg of glyphosate (chronic references dose approved by the E.P.A.) on anxiety-like behaviors, fear conditioning, and fear extinction. Methods and Results: After 10 weeks of exposure, rats were put on an elevated plus maze, where glyphosate-treated animals spent less time in the open arms (Control: 103.7, Glyphosate: 51.35, p = 0.0119), suggesting increased anxiety-like behavior. For fear conditioning, after 16 weeks of exposure, we put the rats on a chamber where they were presented a tone followed by a foot shock. We measured freezing behavior during the duration of the tone and found no significant difference between groups (Control: 30.34, Glyphosate: 38.14, p = 0.0945). Interestingly, when we measured freezing in fear extinction, glyphosate-treated group freeze significantly more than controls only when the threat (the tone) was not present, which is more similar to expression of anxiety-like behavior than fear behavior (Control: 68.62, Control: 82.44, p = 0.0451). Conclusion: Altogether, our results show that glyphosate exposure increases anxiety-like behaviors after 10 and 16 weeks of exposure. Future work will evaluate contextual fear conditioning and platform-mediated avoidance. Acknowledgements: This research was supported by NIEHS R21ES034191, NINDS R21NS119991, Brain & Behavior Research Foundation Young Investigator grant, PRCTRC Pilot, NIGMS COBRE II, RCMI8G12MD00760, NSF PRCEN, Neuro-ID 2R25NS080687-11 fellowship, and UPR Med Sci Campus Chancellor's Office and School of Medicine Deanship.

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Conocimiento y práctica de enfermería sobre medidas de prevención en pacientes con neumonía asociado a ventilación mecánica en las unidades de cuidados intensivos

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Trasfondo y Objetivos: La neumonía adquirida por manejo en el hospital se considera una de las causas más frecuentes de infección nosocomial. Pacientes con ventilación mecánica en ICU se consideran los más susceptibles en desarrollar una neumonía nosocomial asociada a ventilación mecánica (NAV). Es la segunda causa de muerte en los E.U. El propósito de este estudio fue establecer si existe una correlación entre el nivel de conocimiento del profesional de enfermería sobre la práctica de la prevención de NAV en las unidades de intensivo de dos hospitales del área metropolitana. Métodos: El estudio tuvo una muestra de 30 participantes por disponibilidad y dos escenarios clínicos. Se utilizaron dos instrumentos: "Instrumento de Conocimiento de Personal de Enfermería de la Prevención de NAV", auto-administrado y Evaluación de Enfermería en las Medidas de Prevención en Pacientes con Neumonía Asociado a Ventilación Mecánica (NAV). Resultados: El nivel de conocimiento del personal de enfermería sobre la prevención de NAV obtuvo un 53.3% de una escala de 100%. En la evaluación de la práctica de la prevención del NAV se obtuvo como resultado un 86.2% de 100%. El 50.0% de los participantes obtuvo tanto un nivel de conocimiento y prácticas equivalentemente altas. Conclusión: Se comprobó que el mayor desempeño en la categoría de práctica es equivalente a un nivel de alto rendimiento aunque el conocimiento es medio. El profesional de enfermería ejecuta pero no tiene el racional identificado posiblemente por falta de educación continua. Para esta muestra, conocimiento y práctica parecieron ser dos eventos residuales o de efecto como producto del tiempo de experiencia del profesional de enfermería. Aprobado: IRB: 2290035327. 1. PI, Estudiante Programa Maestría en Ciencias de Enfermería. 2 Co-PI, Estudiante Programa Maestría en Ciencias de Enfermería. 3. Preceptora del Estudio y Profesora del Curso de Investigación en Enfermería

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The role of loneliness in suicide risk among university students who are sexual minorities

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Background and Objective(s): The COVID-19 pandemic brought an abundance of stressors that affected the mental health of college students in Puerto Rico (PR). However, there has been a lack of research to identify the consequences of lockdown measures on sexual minorities' mental health. Therefore, the present study explored if sexual minority status increased the likelihood of suicide risk and determined if feelings of loneliness modified this relationship. Method: The present study used a cross-sectional, web-based survey design with convenience sampling. The sample comprises 356 students, primarily female (78.93%), from the University of PR, Río Piedras Campus (UPR-RP). The survey included screenings for feelings of loneliness (TILS) and suicide risk (PHQ-9). Researchers performed an ordinal logistic regression to predict suicide risk based on sexual minority status. Loneliness scores were later added to the model as a confounder. Results: The results of the analysis revealed that having sexual minority status increased the log-odds of experiencing thoughts of suicide or self-harm on several days [β= 1.65, SE = 0.30, z = 5.58, p < 0.001] and at least more than seven days in the last two weeks [β = 1.93, SE = 0.45, z = 4.33, p < 0.001]. Log-odds for experiencing thoughts of suicide or self-harm decreased after correcting for feelings of loneliness in the several days [β = 1.39, SE = 0.31, z = 4.56, p < 0.001] and more than seven days in the last two weeks [β = 1.68, SE = 0.46, z = 3.68, p < 0.001] categories. Conclusion: The results of this study suggest that sexual minorities continue to suffer from increased suicide risk compared to their sexual majoritarian counterparts. Managing feelings of loneliness could be a potential avenue for suicide risk management in this sample. Acknowledgements: The authors acknowledge Dr. Manuel González González for his contributions in the early phase of development of this study.

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La Salud Sexual de los Sobrevivientes de Cáncer del Hospital HIMA•San Pablo Oncológico, en Caguas.

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Trasfondo y objetivos: Varios estudios han demostrado que los pacientes que padecen de cáncer experimentan cambios en su vida sexual cuando comienzan el tratamiento. Es por esto por lo que, se realizó una encuesta para explorar cuáles son esos cambios a base del tratamiento que se recibe. Además, se buscaba identificar también información necesaria y de interés sobre servicios de ayuda para manejar dichos cambios y promover una mejor calidad de vida. Método: Para desarrollar la "Encuesta sobre la Salud Sexual de Sobrevivientes de Cáncer" se utilizó como guía la encuesta de EORTC SHQ-C22. Se incluyeron preguntas sociodemográficas, así como de exploración de la vida sexual y cambios enfrentados en la vida sexual, entre otros. Participaron 41 pacientes oncológicos adultos entre las edades de 23 a 83 años; 56.1% (n=23) mujeres y 43.9% (n=18) hombres que recibían sus tratamientos de radioterapia o quimioterapia en el Hospital HIMA•San Pablo Oncológico, en Caguas. Resultados: El 36.6% reportó que el tratamiento ha afectado mucho o bastante la frecuencia con la cual tienen relaciones sexuales. Además, un 17% de los participantes reportaron que su vida sexual se ha afectado por el tratamiento que reciben para combatir el cáncer. No obstante, el 44% indicó que desea recibir información sobre recursos de ayuda. Conclusión: Los órganos sexuales, el deseo sexual, la actividad sexual, y la imagen física puede verse afectada por el cáncer y los tratamientos que recibe el paciente oncológico. En adición, son pocos los pacientes que se atreven a hablar del tema y solicitar ayuda para atender sus problemas físicos. Es esencial e importante normalizar el diálogo sobre

la salud sexual entre profesionales de la salud y los pacientes oncológicos. De esta forma, crear espacios en donde se trabajen otras áreas de la salud, más allá que combatir el cáncer.

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Evaluation of Child Sexual Abuse in Children with Disabilities: A Sample Case Walkthrough at Puerto Rico Health Justice Center

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Purpose: The increased prevalence of child sexual abuse (CSA) has been a growing concern. Identifying its risk factors can help develop effective preventive and management measures for those exposed to CSA. Children with disabilities possess more significant risk factors, although not all confer the same risks. This report aims to provide a step-by-step of an active child sexual abuse case at the Puerto Rico Health Justice Center (PRHJC). Case Description: A 14-year-old male was referred to the PRHJC due to suspected CSA. The patient was referred after his sister disclosed her history of CSA, and both were removed from their home following a protection order against the alleged aggressor. The patient was observed with speech delay, poor socialization, and no formal diagnosis. Upon collateral interview, the patient's mother did not provide a "reasonable explanation" for the patient's lack of dental care or current global developmental status. Physical Exam: V/S: 102/68 P: 68, Height: 4'11" Weight: 77 lbs., Underweight with odd behavior for age, noticeable speech delay, and multiple caries. Assessment: The patient will be evaluated for suspected CSA, neglect, and neurodevelopmental disorders. Additionally, the patient will be assessed for medical needs before case prosecution. Treatment plan: The patient will be referred to the following services: dental, neurological, pediatric, and nutritionist evaluation; speech, language, psychological and forensic assessment. Follow-up: Follow-up was given to Family Department Investigation after custody was returned to the patient's mother after no allegations of SA arose during the interview. Discussion: The patient's speech & language difficulties could not provide a history, yet that does not exclude sexual abuse. Conclusion: Efforts to improve medical and legal services to children with disabilities should ensure that proper steps are taken toward early identification and intervention of vulnerable populations exposed to CSA and offer adequate care. Acknowledgments: The authors have no conflicts of interest to declare. Puerto Rico, Health Justice Center, supports this research.

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A serious inflammatory disease disguised under substance abuse: A significant mimicker of the clinical presentation of Granulomatosis with polyangiitis

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Purpose: Granulomatosis with polyangiitis (GPA) is a systemic necrotizing vasculitis that involves small and medium-sized blood vessels. It is characterized by granulomatous inflammation of upper and lower respiratory tract with or without renal involvement. Rarely, limited expressions of GPA to the upper airway in the absence of systemic symptoms has been described, making this diagnosis challenging. When limited to the nasal anatomy, it manifests with destructive sinonasal lesions that are similar to those seen in patients with chronic intranasal cocaine use. Herein, we report a patient who presented with upper airway mucosal involvement as the sole manifestation of GPA. Case Description: A 64-year-old woman with hypertension and

chronic cocaine use presented with a four-month history of persistent headaches, epistaxis, and rhinorrhea. Physical examination showed right tympanic membrane serous effusion, saddle nose deformity associated with nasal crusting and a large perforated nasal septum. Laboratory tests revealed anemia, thrombocytosis, and elevated inflammatory markers. Antineutrophil cytoplasmic antibodies (ANCA) including proteinase-3 and myeloperoxidase antibodies were normal. Maxillofacial computerized tomography scan showed extensive mucoperiosteal thickening throughout the paranasal sinuses and erosive changes in the nasal septum and uncinate process. Nasal mucosa biopsy revealed small vessel necrotizing vasculitis with multinucleated giant cells. She was treated with high dose prednisone, methotrexate and folic acid. Within 3-months of treatment, she had a marked improvement and has remained in complete remission. Conclusion: Like limited-GPA, chronic intranasal cocaine use can debut with several upper airway manifestations including epistaxis, rhinorrhea and mucosal lesions exhibiting a granulomatous or necrotizing pattern. Moreover, only 60% of patients with limited-GPA are ANCA-positive. This case highlights the importance of considering GPA among the differential diagnosis in patients presenting with upper airway involvement even in the absence of typical serologic markers. Clinicians should be aware that early histopathological diagnosis and immunosuppression are critical to improve patient outcomes.

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Oral short chain fatty acids are associated with microbial-related inflammation in People with HIV

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Despite antiretroviral therapy (ART), people with HIV (PWH) have an increased risk of developing cancer compared to people without HIV (PWOH). Dysbiosis of the oral microbiome occurs in PWH and can contribute to chronic inflammation that can promote translocation of microbial products into the bloodstream. In this study, we investigated the association between short chain fatty acids (SCFAs) and inflammatory markers in the saliva and blood plasma in relation to HIV. We collected saliva, blood, sociodemographic, and clinical data from 80 adults (50 PWH and 30 PWOH). PWH were virally suppressed (<50 copies/mL) and had a median CD4 count of 699.8 cells/μL [IQR:424-924]. We quantified SCFAs (acetate, propionate, and butyrate) in saliva and plasma using GC-MS. We measured inflammatory markers (TGF-β1,Il-2,Il-6,Il-17,IL-1β and soluble CD14 [sCD14]) in saliva and TGF-β1, Il-17 and sCD14 in blood plasma using quantitative immunoassays. Statistical analyses were performed using R statistical software. PWH showed higher levels of TGF-β1 in both saliva and plasma ($p<0.05$) compared to PWOH. There were no differences in the median levels of all SCFA between our study groups in saliva. However, PWH showed significantly lower acetate ($p<0.01$), propionate ($p=0.03$), and butyrate ($p<0.01$) in plasma compared to PWOH. TGF-β1 levels in saliva were associated with acetate (rho=0.52), propionate (rho=0.48) and butyrate (rho=0.45;$p<0.01$ for all). Moreover, the associations between TGF-β1 in saliva with all SCFAs were independent of HIV status (Acetate:R2=0.31;Propionate:R2=0.27;Butyrate:R2=0.7;$p<0.01$) and remained significant after adjusting for age. There were no correlations between levels of SCFAs and inflammatory markers in the saliva with their respective levels in plasma. The positive association between SCFAs and TGF-β1 in the saliva suggest the oral microbiome may contribute to increased inflammation and cancer risk in the oral cavity in PWH. Therefore, these microbial products may be essential to develop novel preventive strategies targeting SCFAs in the oral cavity.

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A kissing disease leading to deadly abdominal pain: An atypical presentation of Epstein Barr Virus infection

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Purpose: Infectious mononucleosis (IM) is commonly characterized by the triad of pharyngitis, fever, and lymphadenopathy. Epstein Barr Virus is the primary cause of IM. It is typically self-limiting, but very rarely can cause lethal complications. Spontaneous splenic rupture is reported in less than 0.5% of cases, however it is the most frequent cause of death in IM. Case description: A 65-year-old male patient presented with sudden onset, severe, left-sided abdominal pain. He denied any associated symptoms and history of trauma, recent travels, or sick contacts. Physical examination was remarkable for severe tenderness to palpation over the left upper quadrant with voluntary guarding. Laboratories revealed mild leukocytosis, normocytic normochromic anemia, no coagulopathy and mild transaminitis. Abdominopelvic CT was remarkable for a large subcapsular splenic hematoma measuring 13.7 x 4.7 x 11.2 cm, a liver laceration, and bilateral hemothorax. Interventional Radiology (IR) performed an emergent splenic artery embolization with drainage placement. A broad differential was considered excluding neoplastic, hematological, inflammatory and infectious etiologies. Workup was remarkable for negative blood cultures and serologies for viral hepatitis, human immunodeficiency virus, and cytomegalovirus. Echocardiogram, and antinuclear antibodies were negative. EBV viral-capsid Ag IgM and IgG highly reactive, consistent with an active EBV infection. Patient sustained a prolonged hospitalization complicated by hematoma infection requiring intravenous antibiotics. After completing therapy, the patient was discharged with follow up with IR services. Conclusions: IM is a self-limiting disease, however it has been associated with rare complications. This case highlights the presence of potentially fatal complications such as atraumatic SSR, bilateral hemothorax and liver laceration, as the initial presentation of the disease. It requires early involvement of a multidisciplinary team to adequately assess possible causes and guarantee appropriate management. It also entails the diagnostic challenge and high clinical suspicion of EBV in the setting of a previously asymptomatic patient with such an atypical presentation.

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Current trends in Awake Spine Surgery under Spinal Anesthesia: A Literature Review

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Background: Spinal anesthesia is a well-established technique in awake spine surgery that is associated with a number of benefits, such as decreased intraoperative hypertension, need for postoperative analgesia, blood loss, and length of stay. However, there is a lack of consistency in the protocols used for patient selection, sedation, spinal anesthetics, and postoperative analgesia among different institutions. Objectives: In this review, we examine the current literature on patient selection, positioning protocols, preoperative and intraoperative sedation, spinal anesthetics, and postoperative analgesia used in awake spine surgery. We also explore the potential impact of these variables on patient outcomes after surgery, providing insights on how to optimize the use of spinal anesthesia in awake spine surgery. Methods: We searched the PubMed, EMBASE, and SCOPUS databases and used search terms such as "Awake Spine Surgery","Discectomy", "Laminectomy", "Outpatient Spine Surgery", "Ambulatory Spine Surgery", and "Spine Surgery" combined with "Spinal Anesthesia.". Additional articles were obtained by cross-checking references and utilizing Google Scholar. After reviewing abstracts for relevance, we reviewed full-length articles for pertinent clinical variables. Results: The review identified 47 articles specifically addressing spinal surgery under spinal anesthesia out of 1378 initial articles. Results showed that patient selection criteria varied among institutions, some focusing on the patient's overall health and others on specific comorbidities. In terms of sedation protocols, the review found that institutions used

different techniques, some using oral sedatives and others using intravenous sedatives. Spinal anesthetics were consistent among institutions, with variants of bupivacaine such as hyperbaric bupivacaine, isobaric bupivacaine, and levobupivacaine being the most used. Conclusions: The literature review conducted on protocols used for awake spine surgery with spinal anesthesia found a lack of consistency in patient selection, preoperative and intraoperative sedation, spinal anesthetics, and postoperative analgesia among institutions, highlighting the need for further research to establish best practices.
Acknowledgements: None.

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Prostate Cancer: Retrospective Study with Radiological-Pathological Correlation Using mpMRI of the Prostate

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Objectives: Determine the correlation between Transrectal Ultrasound-Guided Biopsy (TRUS-BX) and mpMRI in the South of Puerto Rico. Utilize the Prostate Imaging Reporting and Data System (PI-RADS) to provide a standardized interpretation of prostatic cancer lesions being analyzed in mpMRI in the South of Puerto Rico. Introduction: This retrospective study shows the potential and benefit of utilizing mp-MRI in prostatic cancer's medical detection and management protocols. There is an assessment between the results obtained from TRUS-Bx and mp-MRI of the prostatic tissue. According to the latest literature, the mp-MRI shows great diagnostic benefit when used in conjunction with the Fusion Guided biopsy, which is not yet available in the south of Puerto Rico. The TRUS-Bx technology requires at least 12 cores of prostate tissue, particularly from the more accessible peripheral zone of the prostate. Therefore, the TRUX-Bx is prone to miss cancerogenic tissue in the more anterior areas of the prostate and may result in decreased sampling accuracy and even underestimation of pathologic lesions. In terms of the patient care, utilizing this method of biopsy may expose patients to undergoing unnecessary radical prostatectomies and even several TRUS-Bxs in the patient's lifetime. Methods: A systematic multi-step review with male urological patients seeking urological attention in the South of Puerto Rico. Results: We are still in the process of increasing our sample size, but as of now with our current data, we have established that the mp-MRI is able to accurately detect false positive TRUS-Bx errors. Conclusion: This systematic multi-step review hopes to increase sample size and eventually, when the technology is available, analyze the correlation between the Fusion Guided Biopsy and the prostatic mp-MRI.

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El género y la discapacidad: características sociodemográficas de la población con diversidad funcional en Puerto Rico

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Trasfondo y objetivos: El 16% de la población mundial tiene algún tipo de discapacidad, observándose una mayor prevalencia en países en desarrollo. El nivel de prevalencia de esta condición en P.R. sobrepasa el observado mundialmente. Esta población es diversa en características, y debido a las barreras que enfrenta, ve limitada su participación en un plano de igualdad en la sociedad. Aspecto que se recrudece para la población femenina por la diversidad de roles que esta desempeña en la sociedad. El objetivo del estudio fue analizar las características sociodemográficas de la población con alguna discapacidad por género en Puerto Rico para el 2016-2020. Metodología: El estudio fue de carácter transversal descriptivo. La fuente de datos fue la Encuesta sobre la Comunidad de Puerto Rico, 2016 al 2020. Resultados: La prevalencia de discapacidad en Puerto Rico es de 22%. Hay 86.8 hombres por cada 100 mujeres con discapacidad. Se observó una mayor prevalencia entre mujeres (53.5%), la diferencia entre géneros aumenta considerablemente para la población de 65+. Las mujeres muestran mayor discapacidad que los hombres de tipo ambulatoria y relacionada con vida independiente (27.1% vs 22.7% y 21.4% vs 19.2% respectivamente). La población femenina con diversidad funcional mostró un nivel

de educación más alto, sin embargo, menor por ciento de participación laboral, menor ingreso y mayor nivel de pobreza al compararla con su con su contraparte masculina. Conclusiones: Las características de la población con discapacidad difieren por género. Esta población es colocada en una posición de desventaja y vulnerabilidad, especialmente, las mujeres. La población femenina de diversidad funcional se enfrenta habitualmente a situaciones de desigualdad reflejadas en las características sociodemográficas. Impera trascender la visión biológica o fisiológica de la diversidad generando la necesidad de un análisis inclusivo que reconozca que este no es un asunto que le compete enfrentarlo solo al individuo.

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El invierno demográfico de Puerto Rico: un reto inminente para la salud y el bienestar

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Introducción y objetivos: P.R. posee una estructura de edad vieja, escenario demográfico similar a la de los países desarrollados. Sin embargo, su situación social y económica dista mucho de ser parecida al de este grupo de países. Esto provoca consecuencias trascendentales en el ámbito de la salud de su población. El objetivo principal del presente estudio fue establecer una línea de vida del envejecimiento poblacional y analizar la dinámica demográfica responsable de estos cambios. Métodos: Se calcularon diversos indicadores demográficos y estadísticos para establecer una línea de vida del evento e identificar las variables protagonistas de este cambio. Resultados: A partir del 1960 se observa un descenso marcado en población, (tasa de crecimiento negativa r=-1.25). Los factores responsables de este cambio son el descenso nacimientos y la alta cifra de emigrantes. La mujeres en P.R. tienen en promedio menos de un hijo (.89). En la última década salieron en promedio 7,00 personas mensualmente. El país cuenta con una estructura de edad vieja, 3 de cada 10 personas son adultos mayores (65+), y solo 13% de la población es menor de 15 años. El índice de envejecimiento mostró un considerable aumento y el de juventud, un descenso marcado. La tasa de dependencia global es 56%, más de la mitad de la población, depende de aquellos en edad trabajadora. Todos los municipios muestran una estructura de edad vieja. Conclusiones: No se prevé, a corto o largo plazo, un aumento en los nacimientos ni disminución de emigrantes. El país experimenta lo que se conoce como una bomba de tiempo demográfica, donde una cantidad de población laboral más pequeña tiene que sostener la población de gerontes y jubilados. La situación demográfica unida a la crisis fiscal que experimenta el país representa un reto para todas las dimensiones del bienestar y la salud del país.

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ADEA Academic Dental Careers Fellowship Program: Education about Hospital Dental Services for Children at University Pediatric Hospital Dr. Ortiz

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Background and Objectives: The American Dental Students Association (ADEA) co-founded the ADEA fellowship program, where dental students explore academic research, teaching, and other aspects of their academic careers. Our team focused on the procedure, treatment, and care of children in the operating room who require dental services. The objective of this academic fellowship was: 1) To educate dental students about hospital dentistry in two academic settings. 2) Learn and employ the teaching experience. 3) Evaluate the performance of the academic conferences given to students in different academic settings. Methods: A conference was offered based on the shadowing experience at the University Pediatric Hospital (HOPU) in the operating room and academic resources on hospital dentistry. The conference focused on an introduction to hospital dentistry, the requirements for the patient to receive dental services in an operating room, the procedures, and a case discussion of the children

treated during the shadowing experience. The educational experience was given to dental students in a lunch-and-learn experience at the UPR School of Dental Medicine (UPRSDM) and pre-dental students through an online classroom. After the conference, a satisfaction questionnaire was sent to attendants with a google form questionnaire. Results: Students that attended the educational activities stated to be in favor that the conference helped them learn and understand all the concepts discussed, that each concept was explained with clarity, examples used to understand the material better, and that the lecturer demonstrated knowledge of the theme exposed. Conclusions: ADEA Academic Dental Careers Fellowship provides an environment to strengthen and promote educational experiences for dental students. This academic experience successfully provided insight into the hospital services children receive in HOPU and gave a perspective of the work residents of the Postdoctoral Program in Pediatric Dentistry provide daily. Acknowledgments: This is a non-funded program. We appreciate the effort of the UPRSDM staff, faculty mentors, and Liaisons to fulfill our goals. Also, we acknowledge the collaboration of the UPRSDM Postdoctoral Program with the Pediatric Dentistry Director, residents, and staff who provided access, guidance, and insight to our dental students.

Abstracts that reported IRB/IACUC protocol number

ID#	Protocol Number
4314	IRB: 4409
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4326	IRB: #2021-113
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ID#	Protocol Number
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4461	IRB: OMB No. 0925-0001/0002
4464	IRB: 2290035327
4465	IRB: CIPSHI 2122-084
4469	IRB: 1819-201 CIPSHI

Published by:

PRHSJ

Puerto Rico Health Sciences Journal

for the 43rd Annual Research and Education Forum

University of Puerto Rico Medical Sciences Campus

San Juan, Puerto Rico

2023