

■ 2023 / suplemento 6

■ volume 7 • número 2

Anais _ 2023

REVISTA INTERDISCIPLINAR
CIÊNCIAS MÉDICAS

ISSN 2526-3951

**XIX SIMPÓSIO DE
PESQUISA E EXTENSÃO
ACADÊMICA DA FCMMG**

**III SIMPÓSIO INTERNACIONAL
DE PESQUISA E EXTENSÃO
ACADÊMICA**

Apresentação

O XIX Simpósio de Pesquisa e Extensão Acadêmica da Faculdade de Ciências Médicas de Minas Gerais e III Simpósio Internacional de Pesquisa e Extensão Acadêmica teve como temática a popularização da ciência. O objetivo do evento foi promover a divulgação das atividades de pesquisa apoiadas pelo Setor de Pesquisa e Extensão no ano de 2023.

O evento aconteceu no dia 02/09/2023 e se destacou por promover trocas de experiências entre os alunos de todos os cursos da FCMMG e convidados externos, enriquecendo a interdisciplinaridade na instituição. Além das apresentações de trabalho pelos discentes, foram realizadas diversas palestras por pesquisadores de reconhecida excelência nacional e internacionalmente.

O simpósio contou com a palestra intitulada “Trajetória e estratégias de internacionalização da pesquisa científica” ministrada pelo Prof. Henrique Araújo Lima, da Faculdade de Ciências Médicas Minas Gerais, com vínculo com a Universidade Federal de Minas Gerais, e pesquisador financiado pelo Bill & Melinda Gates Foundation. Foi também ministrada a palestra “Como fazer comunicação científica para a população” do Prof. Daniel Dias Ribeiro do Hospital das Clínicas da Universidade Federal de Minas Gerais. Foi apresentada a mesa redonda “Carreira acadêmica no Brasil e no exterior” do Prof. Pedro de Castro Lopes, da Faculdade de Ciências Médicas Minas Gerais e da Dra. Ísis Baroni, Postdoc Research Fellow at MGH. Além disso, o Prof. Leonardo Oliveira Pena Costa, da Universidade Cidade de São Paulo, UNICID, ministrou a palestra intitulada “Qual a importância da popularização da ciência?”. Por fim, a palestra “Saúde física e mental em pacientes oncológicos: comunicação de más notícias” foi ministrada pelo Prof. Pedro William Machado de Almeida, da Universidade Federal de Minas Gerais.

Uma inovação apresentada no evento deste ano foi a utilização de pôster digital. As apresentações neste formato resultaram em maior satisfação dos alunos, além de ser uma ação sustentável uma vez que evita o uso de papel para impressão.

Espera-se que a publicação dos trabalhos apresentados no evento possa fortalecer o Simpósio de Pesquisa e Extensão, além de incentivar uma maior participação de outros alunos em atividades de pesquisa, extensão e ligas acadêmicas.

PROF. DR. JOSÉ FELIPPE PINHO DA SILVA

**Coordenador do Setor de Pesquisa e Extensão
da Faculdade de Ciências Médicas de Minas Gerais**

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III SIMPÓSIO INTERNACIONAL DE PESQUISA E EXTENSÃO ACADÊMICA

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ORIGINAL STUDY

Clinical and epidemiological profile of patients with chronic kidney disease submitted to hemodialysis in a public hospital in Minas Gerais

Perfil clínico e epidemiológico de pacientes com Doença Renal Crônica submetidos à hemodiálise em um hospital público de Minas Gerais

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ABSTRACT

Introduction: Chronic kidney disease (CKD) is considered a disease of high morbidity and mortality, being a significant challenge for public health. In Brazil, the incidence and prevalence of functional failure kidneys are increasing and the prognosis is unfavorable. In the last stage of CKD, the kidneys lose their function, requiring renal replacement therapy. In this sense, the epidemiological study allows identifying a pattern of distribution in the population and main etiologies, contributing to the definition of strategies for management and improved prognosis. **Objectives:** The objectives of this study are analyzing previous comorbidities and CKD etiologies, correlate the prevalence of the results evaluated with several variables, and provide a better prevention and treatment strategy. That way, it is possible to evaluate the epidemiological profile and clinical trial of individuals with chronic kidney disease undergoing hemodialysis in a public hospital in Belo Horizonte. **Methods:** This is an observational, quantitative, descriptive, prospective and cross-sectional study, through the analysis of data collected from medical records at the Hemodialysis Service in a public hospital from September 2023 to November 2023. **Results:** On a global scale, the diseases that commonly lead to chronic renal failure, and consequently to dialysis, are high blood pressure and diabetes. It is expected to find a major frequency of these diseases as the etiology of the CKD in patients. The early diagnosis and treatment of chronic diseases that have the potential to cause renal failure, are extremely important for the improvement of the prognosis of CKD. So, it is expected to contribute to the design of a detailed profile of patients, to help in the clinical management and improvement of the prognosis of patients. **Conclusion:** Diagnosing and providing adequate treatment, along with preventive strategies, can reduce suffering, minimize complications and negative impacts in the short/ long term of the CKD.

Descriptors: Renal Dialysis; Chronic Kidney Disease; Renal replacement therapy.

ORIGINAL STUDY

Prevalence of sarcopenic obesity in Brazilian adults and elderly: Systematic review and meta-analysis

Prevalência de Obesidade Sarcopênica em adultos e idosos brasileiros: Revisão sistemática e metanálise

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ABSTRACT

Introduction: Defined as a condition that results from the coexistence of loss of mass and muscle function associated with excess adipose tissue, the sarcopenic obesity (OS) has been the target of the scientific literature due to its silent characteristics that negatively imply in health. **Objective:** This study aimed to estimate the pool prevalence of OS in Brazilian adults by macro-regions. **Methods:** Systematic review carried out with studies that dealt with the number of new and old cases of Brazilian adults with obesity in the different macro-regions of the country, we investigated four independent databases: MEDLINE, Embase, Web of Science, Virtual Health Library, and registered on the PROSPERO platform (#CRD42023424222). The primary outcome was the prevalence of OS in Brazilian adults. **Results:** 3,923 studies were retrieved and, after excluding 1,351 duplicates, 2,572 studies were analyzed by title and abstract. Of which 59 studies from textual analysis, 33 were included. The pool prevalence of OS was 17%, and more frequent in the Midwest. According to the diagnostic method DXA had a higher prevalence of 26% and BIA a lower prevalence of 6%. **Conclusion:** We consider the percentage of OS found in this review to be high, since it is a clinical condition with a considerable economic impact on the health system. Therefore, it is essential that public policies are implemented to control this disease.

Keywords: Sarcopenic obesity; Macro-regions; Systematic review

ORIGINAL STUDY

Nondiagnostic fine needle aspiration of thyroid nodules: Correlation with demographic, ultrasonographic and Doppler findings

Aspiração por agulha fina não diagnóstica de nódulos da tireoide: Correlação com achados demográficos, ultrassonográficos e Doppler

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ABSTRACT

Introduction: Ultrasound-guided fine-needle aspirations (US-FNA) evaluate thyroid nodules, but nondiagnostic results are variable. Certain ultrasonographic features predict nondiagnostic outcomes, though findings are debated. **Objective:** This study aims to determine the frequency of nondiagnostic results in thyroid nodule US-FNAs, understand risk and protective factors associated with Bethesda I diagnosis, and assess the significance of standardized ultrasonographic descriptors. **Methods:** Data from 2,390 patients was analyzed. Twelve ultrasonographic variables with 41 components were assessed, and nodules were categorized using the ACR TI-RADS system. Seven pathologists used the Bethesda System (TBSRTC) to determine the non-diagnostic group. Analysis, including multivariate logistic regression, was done via SPSS Statistics software. **Results:** From 1471 patients with 1843 nodules, 12 significant factors were associated with Bethesda I diagnosis. Multivariate logistic regression revealed age >55 years, lateral nodule position, predominantly cystic composition, and the absence of double cytopathological analysis as risk factors for Bethesda I diagnosis. In contrast, female sex, isoechogenicity, and lesser pathologist expertise were identified as protective factors against Bethesda I outcomes. Notably, the non-adherence to standardized protocols such as ACR TI-RADS was associated with increased rates of Bethesda I outcomes, emphasizing standardized descriptor importance. **Conclusion:** Our study underscores the value of systematic ultrasound assessments, which reduce bias and increase reproducibility. A consistent methodology in future studies will refine ultrasonographic predictors of Bethesda I diagnosis, vital for improving US-FNA accuracy and doctor-patient interactions.

Keywords: thyroid nodules; US-FNA; ACR TI-RADS; TBSRTC; Bethesda I; diagnosis.

ORIGINAL STUDY

Sarcopenic obesity after bariatric surgery: A rapid review

Obesidade sarcopênica após cirurgia bariátrica: Uma rápida revisão

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ABSTRACT

Introduction: Bariatric surgery is a therapeutic option for obesity treatment. Sarcopenic obesity (so) is characterized by coexistence of excess body fat, low function and muscle mass. so represents a challenge in the body composition of patients undergoing bariatric surgery, since the combination of rapid weight loss associated with loss of muscle mass can result in an increased proportion of residual body fat, thus causing a lower basal metabolism and a decrease in functional capacity and quality of life of patients. **Objective:** To estimate so prevalence using meta-analysis. **Methods:** Review and meta-analysis selecting studies that evaluated adults and elderly after bariatric surgery, in order to understand the prevalence of so. Our search used the MEDLINE (via PubMed), Embase, Scopus and LILACS databases. We included observational studies. Interventional studies; reviews; in vitro studies; adolescents, infants, childrens, and pregnancy, editorials were excluded. **Results:** Seven studies were evaluated and 85.71% of these studies were carried out between 2018 and 2023. The total population assessed in the studies was around 1663 people. The average age was 44 years. The so combined prevalence in adults and the elderly after bariatric surgery corresponds to 20% (95% CI: 11-30%). By localization the so combined prevalence at Brazil was 13% (95% CI: 2-24%), France 20% (95% CI: 0-44%), Spain 23% (95% CI: 20-26%), Italy 14% (95% CI: 3-36%) and Germany 53% (95% CI: 28-77%), and by type corresponds to Gastric Bypass 21% and Sleeve 20% (95% CI: 0-44%). **Conclusion:** The prevalence of so after bariatric surgery was high. so has important health implications, being associated with a higher risk of developing chronic diseases resulting from metabolic changes such as diabetes, hypertension, insulin resistance, dyslipidemia and cardiovascular diseases. In addition, this condition is related to the presence of depression, worse functional performance, reduced quality of life and increased mortality.

Keywords: Obesity, Sarcopenia, Prevalence, Bariatric Surgery, Adults.

ORIGINAL STUDY

Weight regain after bariatric surgery: A systematic review and meta-analysis of observational studies

Recuperação de peso após cirurgia bariátrica: Uma revisão sistemática e meta-análise de estudos observacionais

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ABSTRACT

Introduction: Due to its significant impact on public health the obesity treatment has been studied from various perspectives. Bariatric and metabolic surgeries (BMS) carry their risks and benefits and have specific characteristics. However, weight regain is a frequent complication reported by different studies and is associated with therapeutic failure by surgery. **Objective:** This study aimed to evaluate the prevalence of WR after BMS and predictors associated with the prevalence of weight regain after BMS. **Methods:** Systematic review and metanalysis registered on the PROSPERO under code CRD42023399615. The primary outcome was the prevalence of WR after BMS, defined as recovery >10% of the minimum weight loss used by most studies or points of BMI (> 4 or 5 kg/m²) and the secondary outcomes were factors associated with WR. **Results:** 49% of patients evaluated WR after BMS and this prevalence is higher in those who underwent Roux-en-Y Gastric Bypass surgery (42%) *vs* Sleeve (32%) and patients living in Europe (64%) in comparison to other locations. BMI (OR 0.98; CI95% 0.96-1.00), age (OR 0.99; CI95% 0.98-1.00), are protective factors for WR. Race (OR 1.06; CI95% 0.70-1.43), types of surgery (OR 1.42; CI95% 1.05-1.79), dyslipidemia (OR 1.04; CI95% 0.21-1.88) and hypertension (OR 1.02; CI95% 0.82-1.21) were considered risk factors for weight regain. **Conclusion:** It is concluded that the prevalence of WR after BMS is high and that the use of surgery does not guarantee long-term sustainable weight loss without ongoing lifestyle modifications and dietary treatment to ensure the efficacy and effectiveness of the surgery.

Descriptors: Bariatric and metabolic surgeries; Obesity; Systematic Review

Financial support: Supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior—Brazil (CAPES)—Funding Code 001. In addition, a thank you to CAPES for providing the scholarship of the Postgraduate Development Program (PDPG), linked to the Faculdade de Ciências Médicas de Minas Gerais for author MGR.

ORIGINAL STUDY

Transfer car support for wheelchair users

Suporte de transferência de cadeirantes para carro

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ABSTRACT

Introduction: Some wheelchair users use the car as a means of transport. For that they often face limitations during internal and external transfer of the vehicle, many times, result in restricted social participation. This way there is a need for the development of a product to make easy this transfer process. **Objective:** To develop an innovative product to facilitate the transfer of wheelchair users between the wheelchair and the car. **Methods:** Previously, the literature search was conducted, wheelchair users were interviewed and videos of the transfer process were analyzed. Following these steps, a list of necessary materials and the budget were compiled. Consequently the product consists of a strong vacuum suction cup positioned on the car's column, capable of supporting weights up to 200kg. Additionally, an adjustable-height handle was added to it. Subsequently, test was carried out to assess the product effectiveness. **Results:** The presented prototype, with a budget of R\$220,00, demonstrated positive outcomes in terms of safety, weight support, autonomy, and promotion of automobile-related mobility. After conducting test at the FCMMG outpatient clinic, the patient was able to effectively and autonomously place and remove the product on the upper car column and transfer without difficulties. The prototype proved to be practical, portable, lightweight, and cost-effective. **Conclusion:** The project provided to be useful and will enable greater accessibility, mobility, as well as increased independence and social participation for these individuals.

Keywords: Automobile; Transference; Social Participation.

ORIGINAL STUDY

The oximetry and its impact on the evolution of children with congenital cardiac malformations

O teste do coraçãozinho e o seu impacto na evolução de crianças com malformações cardíacas congênitas

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ABSTRACT

Introduction: The oximetry, known in Brazil as “Teste do Coraçãozinho”, consists of an exam performed in the first 24 to 48 hours of life, in newborns older than 34 weeks, and aims at tracking congenital heart diseases (CHD). This test was implemented in the Sistema Único de Saúde (SUS) in 2017, in the Plano Nacional de Assistência à Criança com Cardiopatia Congênita (PNACCC). These diseases consist of anomalies in the function or structure of the heart, which appear in intrauterine life, when the heart is formed. Among the numerous CHDs, the present study will address the common arterial trunk, congenital pulmonary valve stenosis, congenital aortic valve stenosis and hypoplastic left heart syndrome. **Objective:** The present study aims to evaluate the impact of the PNACCC in the diagnosis and evolution of live births in Brazil with critical congenital malformations. **Methods:** This is an observational, quantitative, analytical, retrospective and cross-sectional study that collected data on live births with critical congenital heart disease and performed a comparative analysis. **Results:** From 2013 to 2016, there was an average of 0,00005% among all live births with the congenital heart diseases described above. In 2017, there was 0,00007% of CHD among all live births, in 2018, 0,00009% and in 2019, 0,00008%. In addition, the highest rate of diagnosis is between 34 and 42 weeks pregnancies, with a higher prevalence between 37 and 41 weeks and little influence of birth weight. **Conclusion:** Based on the data analyzed, it is possible to conclude that there was an increase in the detection of congenital heart diseases experienced after 2017. Therefore, the implementation of the oximetry test in the SUS by the PNACCC was responsible for an increase in the diagnosis of CHD.

Descriptors: Congenital heart defects; Oximetry; Live birth.

Financial support: Faculdade de Ciências Médicas de Minas Gerais and PIBIC/FAPEMIG scholarship.

ORIGINAL STUDY

Deliberate practice and its application in the teaching of Human Physiology during the course of medicine

Prática Deliberada e sua aplicação no ensino de Fisiologia Humana durante o curso de Medicina

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ABSTRACT

Introduction: Simulation Based Learning (SBL) is a teaching method still little explored in the context of health education at the undergraduate level, although several studies have already pointed out its potential. It is already known that active teaching methodologies present better results than traditional ones, and, furthermore, the SBL allows, specifically in the health context, the insertion of students in an environment similar and reliable to the professional day to day, allowing the development of skills such as leadership, proactivity, self-confidence and teamwork, while reducing the exposure of patients to inexperienced students. **Objective:** Determine the effectiveness, as well as advantages and disadvantages of the implementation of the deliberate practice in the teaching of Human Physiology in the Medicine course at a private college in Belo Horizonte. **Methods:** Literature review on SBL and its application in the context of medical education. Additionally, an online questionnaire was developed (via Google Forms) on the use of deliberate practice in the aforementioned discipline to be answered by undergraduate medical students. **Results:** To this day, 117 students have answered the questionnaire. So far, 94% of the students enjoy the implementation of deliberate practice during classes, 88,9% completely agrees that the mistakes during scenarios contributed for learning, 74,4% completely agrees that the practice is effective for the fixation of knowledge learned in the classroom, 72,6% completely agrees that they feel motivated during the scenarios, 67,5% completely agrees that they developed team work abilities during the scenarios and 60,7% completely agrees that they developed professional leadership abilities during the scenarios. **Conclusion:** We can see then, that the implementation of deliberate practice in the discipline of Human Physiology has been beneficial for the students, but we still need 79 answers to the questionnaire and a statistical analysis to conclude the research.

Descriptors: Simulation, Medical Education, Physiology.

Financial support: Faculdade de Ciências Médicas de Minas Gerais and PIBIC/FAPEMIG scholarship.

ORIGINAL STUDY

Investigation on the application of standards provided by INMETRO regarding the sphygmomanometers at a health education institution in Belo Horizonte

Investigação sobre a aplicação dos padrões fornecidos pelo INMETRO em relação aos esfigmomanômetros de uma instituição de ensino em saúde de Belo Horizonte

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ABSTRACT

Introduction: Arterial hypertension (AH) is the most prevalent disease among adults and is the leading risk factor for elevated rates of cardiovascular morbidity worldwide. It affects approximately 3 out of 10 individuals in the Brazilian adult population. The sphygmomanometer, used for measuring blood pressure, plays a crucial role in the diagnosis and management of this condition. The accuracy of these devices is essential to obtain reliable readings. However, the quality of sphygmomanometers are overlooked issues, impacting the proper detection of AH. **Objective:** Analyze the sphygmomanometers belonging to a health education institution in Belo Horizonte. **Method:** The study was conducted by analyzing whether the sphygmomanometers of a health education institution followed the standards established by the National Institute of Metrology, Quality, and Technology (INMETRO). It was characterized as a cross-sectional, observational, and non-interventional study, with data collected through a questionnaire applied to professionals, students and direct observation of the devices between February and May of 2023. The inspection of the devices included analysis of their physical aspects (bulbs/rubbers, valves, Velcro/pins, clock), presence of the INMETRO seal, and the date of the last calibration. **Results:** Out of the 78 sphygmomanometers analyzed, only 38.4% (30/78) were suitable for use, following the INMETRO criteria. The calibration date was the worst-rated criterion, with 66.6% (42/78) calibrated within 1 year. 86% (67/78) of the devices did not provide extra cuffs of different sizes. The study analyzed 76 aneroid sphygmomanometers, with 34 belonging to students, 19 to the outpatient clinic, 22 to the hospital, 1 to a physician, and 2 electronic ones belonging to nurses, with the majority of improperly calibrated devices belonging to students. **Conclusion:** It was observed that most sphygmomanometers lacking regular calibration belonged to students, and there was also an unavailability of different cuff sizes provided by the institution.

Descriptors: Sphygmomanometer; Hypertension; Equipment Failure.

Financial support: Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Correlation between fluid overload and the mortality rate in critical patients in a hospital school of the public healthcare system in Belo Horizonte

Associação entre sobrecarga hídrica e a taxa de mortalidade em pacientes críticos de um hospital universitário do sistema público de saúde de Belo Horizonte

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ABSTRACT

Introduction: Rehydration strategies are essential to stabilize the hemodynamic condition of a patient admitted to a hospital environment, either in the ward or in the Intensive Care Unit (ICU). Crystalloid solutions are used for patient hydration, medication dilution, and especially in intensive therapy, to improve tissue perfusion by increasing ventricular preload in patients who are fluid-responsive with low cardiac output. However, without proper control and monitoring, this strategy, meant to increase the chances of survival for a patient in the ICU, can lead to fluid overload and potentially have negative consequences for organs such as the kidneys, liver, brain, lungs, and heart. It may increase the length of hospital stay, mechanical ventilation duration, the need for renal replacement therapy, and reduce the patient's overall survival. **Objective:** Assess the association between fluid overload in patients admitted to the ICU and in-hospital morbidity and mortality at a university hospital within the public health system of Belo Horizonte–Minas Gerais. **Methods:** This is a retrospective cohort study based on data obtained from patients admitted to the ICU of a university hospital within the public health system in Belo Horizonte–MG, during the period from May 1, 2023, to July 31, 2023. **Results:** A total of 36 patients' data were collected, but excluding those with stays of less than 48 hours and those without essential research information, data from 17 patients were analyzed. Patients who stayed in the ICU for more than 21 days had a cumulative positive balance of over 1 liter. Additionally, these patients were the majority to receive blood components and require hemodialysis. **Conclusion:** Despite the data establishing a relationship between worse prognosis and positive cumulative balance at high titrations, the sample size is too small to establish causality. Larger sample studies are necessary for the conclusion to be significant.

Keywords: Cardiac Output; Intensive Care Units; Resuscitation; Crystalloid Solutions; Dosage Forms

Financial support: Faculdade de Ciências Médicas de Minas Gerais e Programa Institucional de Bolsas de Iniciação Científica (PIBIC) da Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Evaluation of the prevalence of chronic kidney disease in diabetic and/or hypertensive patients assisted at the outpatient of the Faculdade de Ciências Médicas de Minas Gerais

Avaliação da prevalência de Doença Renal Crônica em pacientes Diabéticos e/ou Hipertensos atendidos no ambulatório da Faculdade de Ciências Médicas de Minas Gerais

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ABSTRACT

Introduction: Chronic Kidney Disease (CKD) is a global public health concern, affecting 8-16% of the worldwide population, with its prevalence rising steadily. CKD diagnosis relies on assessing albuminuria, serum creatinine levels, and calculating the Glomerular Filtration Rate (GFR). Notably, Hypertension and type 2 Diabetes Mellitus (DM2) are significant contributors to CKD development. Hence, evaluating individuals at risk of CKD who remain unaware of their renal health is pivotal to enhance prognosis and adhere to Brazilian Public Health System (SUS) recommendations. **Objective:** This study aims to determine the prevalence of CKD in those with hypertension and/or DM2. **Methods:** Conducted at a Belo Horizonte medical school's outpatient clinic, this descriptive, observational, cross-sectional study involved patients with hypertension and/or DM2. Renal function of 97 patients was evaluated, and their GFR levels were identified and classified. **Results:** Among the 97 participants, 48% had GFR classified as G1 (> 90 ml/min/1.73m²), 27% as G2 (60-89 ml/min/1.73m²), 13% as G3a (45-59 ml/min/1.73m²), 9.3% as G3b (30-44 ml/min/1.73m²), and 2.1% as G4 (15-29 ml/min/1.73m²). Patient data, including body mass index (BMI), revealed a significant link between the variable DM2 associated with hypertension and Grade I Obesity. **Conclusion:** Of the study's patients, 68% exhibited a decrease in GFR, with 0.02% experiencing a severe reduction. The study aligns with prior research indicating DM2 and hypertension as CKD risk factors. Although limited by its sample size, the study underscores the need for doctors to assess renal function in chronic disease patients based on current evidence. Encouraging more studies within this population could unveil additional associations between common comorbidities and kidney diseases, ultimately enhancing patient care.

Descriptors: Chronic Kidney Disease; Creatinine; Glomerular Filtration Rate.

Financial support: Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Predictors for returning to vehicular driving in individuals after stroke: A cross-sectional study

Preditores para o retorno de condução veicular de indivíduos pós acidente vascular cerebral: Um estudo transversal

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ABSTRACT

Introduction: Post-stroke individuals have a reduced ability to manage transportation or to return to driving vehicles, since motor impairment is the main disability caused by this condition. Deficiencies in visuospatial perception, reaction time, attention, sensitivity, muscle strength and vision are also possible consequences of stroke that may affect the individual's ability to drive a car safely. **Objective:** To analyze the factors associated with the return to vehicular driving of post-stroke individuals. **Methods:** Cross-sectional study approved by the Ethics Committee (CAAE: 04500918.7.0000.5134) including individuals after chronic (>1 year) unilateral stroke, aged over 20 years and independent ambulation. Individuals with cognitive deficits identified by the Mini Mental State Examination, with aphasia and who had never driven were excluded. The characterization of the sample was carried out, in addition to obtaining data on driving before and after the stroke, focusing on information about the vehicles used. Statistical analysis will be performed with descriptive data and normality tests, considering the significance level $\alpha = 0.05$. **Results:** 81 individuals with a mean age of 58.30 (SD± 14.98) years were included in the study. 44 individuals were unable to return to work due to the motor sequelae of the stroke and 11 individuals did not contribute financially at home. 30 individuals were unable to return to management and 25 of these had poor health as justification. Of the 51 individuals who were able to return to driving after the stroke, only 9 had the vehicle adapted and 19 individuals received information from the DETRAN. **Conclusion:** It was observed that most individuals were able to return to driving after a stroke, with poor health being the main outcome that prevented the return to driving.

Descriptors: Stroke; Automobile Driving; Personal autonomy.

ORIGINAL STUDY

Association of personality in the well-being of academics of a private college in Minas Gerais

Associação da personalidade no bem estar em universitários de uma faculdade privada de Minas Gerais

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ABSTRACT

Introduction: Personality factors have stood out as possible predictors of subjective well-being (SWB), being named: extroversion, agreeableness, conscientiousness, neuroticism and openness to experience. Based on the Big Five model, research has indicated that SWB is mainly associated with high levels of Extroversion and low levels of Neuroticism. **Objective:** To analyze the association of Big Five personality factors with the well-being of academics. **Methods:** Cross-sectional analytical observational study that used the International Personality Pool and the Satisfaction With Life Scale questionnaires to measure personality attributes and subjective well-being, respectively, in students at a private college. **Results:** This study had a total of 189 participants. A weak positive correlation was observed between Conscientiousness and life satisfaction ($\tau = 0.23$), as well as the Extroversion and Agreeableness attributes, meaning that as they increase, satisfaction tends to increase as well. Neuroticism had a weak negative correlation with life satisfaction ($\tau = -0.33$), demonstrating that when it increases, satisfaction tends to decrease. Openness to Experience had null correlation. This study is consistent with others presented in the literature, which suggest that the subjective assessment of well-being has a certain correspondence with the personality trait, contributing more to the variation in reported satisfaction with life than the life circumstances. These results should not be generalized to the population, being only representative of the collected sample. **Conclusion:** Personality traits played a significant role in the subjective perception of happiness in the evaluated sample. In this study, Neuroticism and Conscientiousness had a greater influence on well-being, while some results in the literature point to Extroversion. This research presented as a limitation a small sample reached.

Descriptors: Personality; Personality Inventory; Happiness.

Financial support: Programa Institucional de Bolsas de Iniciação Científica (PIBIC) da Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Factors affecting the training and distribution of specialist doctors in Family and Community Medicine in Brazil

Fatores que interferem na formação e distribuição de médicos especialistas em medicina de família e comunidade no Brasil

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ABSTRACT

Introduction: Family and Community Doctors are essential for the viability of Primary Health Care. In Brazil, in 2022, registrations in this specialty accounted for only 2.3% of all specialists practicing in the country. **Objective:** To identify and analyze the factors that interfere with the training and distribution of specialist doctors in Family and Community Medicine in Brazil. **Methods:** Cross-sectional ecological study of a quantitative and analytical nature. The sampling frame included the 26 federal units and the Federal District. Data sources were secondary, obtained from distinct official databases. The analyzed variables addressed four dimensions of the state context: education (availability of medical courses/seats and availability of residency programs/seats in the specialty); labor management (average salary in the state capital); primary care organization (coverage of basic care and the family health strategy); and sociodemographic conditions (Human Development Index, Gini Index, and physician-to-population ratio per 1,000 inhabitants). A database was created using Excel® 2010, and logistic regression analysis was performed using the statistical software spss® 20.0. Variables with a p-value <0.05 were considered statistically significant. **Results:** Only the variable “Coverage of Basic Care” was considered significant (OR: 2.3; CI: 0.57 - 4.4; p = 0.016) for predicting the formation and distribution of specialists in Family and Community Medicine in Brazil. São Paulo, Minas Gerais, Rio de Janeiro, Rio Grande do Sul, and Santa Catarina had a higher percentage of registrations in the specialty compared to the overall number of registrations. **Conclusion:** When the percentage of “Coverage of Basic Care” was higher than the national average, the federal unit showed a 2.3% increased chance of registration in the specialty. The vast majority of specialist doctors in Family and Community Medicine are concentrated in more developed states, located in the South and Southeast regions.

Keywords: Primary Health Care; Family and Community Medicine; Unified Health System.

Financial support: FAPEMIG.

ORIGINAL STUDY

Professional profile and interest of medicine students at a private faculty

Perfil e interesse profissional dos discentes do curso de medicina de uma faculdade particular

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ABSTRACT

Introduction: The National Education Plan determined that 10% of the curricular workload of medicine graduation should be extensionist, providing a humanized training. **Objective:** To evaluate the profile and professional interest of medical students at a private medical school in Belo Horizonte/Brazil. **Method:** Cross-sectional study, carried out between October 2022 and April 2023, via an electronic questionnaire, with questions about the profile and expectations of the course and practice of Medicine. Students from the entire medical course of a private faculty, over 18 years old, were invited to participate. The study was approved by the Research Ethics Committee. **Results:** A total of 272 students were included, of whom, 19% were from the 5th period and 0.2% from the 10th period. A total of 92.3% were between 18 and 25 years old, 73.9% women and 81.6% consider themselves white, while 2.6% are self-declared black, corroborating the profile described in literature. None of them want to work exclusively with public health. The majority (67.3%) want to reconcile public and private health or work according to opportunities (25.4%). An interesting finding was that 7.4% wish to attend only in private care, of whom, 80% are from the 1st to the 5th period and have the curricular extension, suggesting that the interest in public health is related to the appreciation of the SUS professional and the life quality, not just in working with the community. Indeed, none of the 14.7% participants who entered the institution through PROUNI or FIES, want to work only at private health. **Conclusion:** Extension is essential for training in Medicine. However, other factors such as professional development and quality of life may influence the students' professional interest. Thus, studies are needed to evaluate the contribution of extension in medical education.

Keywords: Public Health; Medical students; Health education

ORIGINAL STUDY

Assessment of the nutritional status of elderly sarcopenics compared with healthy elderly

Avaliação do estado nutricional de idosos sarcopênicos comparados com idosos saudáveis

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ABSTRACT

Introduction: Sarcopenia is defined as low muscle strength and low muscle mass. It is estimated that sarcopenia affects 10% to 16% of elderly people worldwide. Modifiable behavioral factors such as diet can influence the development of sarcopenia. Thus, improving nutrition can be effective both in preventing and treating this condition and in promoting health in old age. **Objective:** Compare the nutritional status of elderly people with probable sarcopenia and healthy elderly people. **Methods:** This is a cross-sectional study, carried out in an outpatient clinic of medical specialties in Minas Gerais, from September 2022 to June 2023. All elderly people with probable sarcopenia were identified using the criteria established in the European Working Group on Sarcopenia in Older People of 2019 (EWGSOP2). Individuals who scored less than 5 on the 10-point Cognitive Screening (CS - 10) were excluded. The instrument applied in the sample was the Mini Nutritional Assessment (MAN). **Results:** A total of 174 elderly people were collected, of which 63 were excluded for not passing the cognitive screening, totaling n = 111, with an average age of 74 years with an average of 2 comorbidities and using an average of 6 medications, the majority (n = 79 ; 71%) female. Of these, 61 individuals were classified as likely sarcopenic and had a mean score of 10.11 on the MAN, of which 37 (60%) were at increased risk of malnutrition. Furthermore, 50 individuals were classified as non-sarcopenic and had a score of 11.02 on the MAN. **Conclusion:** The sarcopenic elderly had a greater possibility of malnutrition and a lower level of physical activity. This finding suggests that attention to this factor is necessary in the clinical evaluation and treatment of these patients.

Keywords: Sarcopenia; Physical Functional Performance; Nutrition Assessment; Aged

Financial support: This study received Financial support from the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Performance of elderly sarcopenics compared with healthy elderly people in the short physical performance battery

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ABSTRACT

Introduction: Sarcopenia is defined as low muscle strength, loss of muscle mass and/or physical performance. This condition is associated with a high risk of adverse health events such as falls and fractures, metabolic disorders, cognitive impairment, and mortality in the general population. In this context, factors such as physical inactivity are related to an increased risk of sarcopenia. **Objective:** To compare the functional physical performance of elderly people with probable sarcopenia and healthy elderly people. **Methods:** This is a cross-sectional study, carried out in an outpatient clinic of medical specialties in Minas Gerais, from September 2022 to June 2023. Individuals who scored less than 5 in the 10-point Cognitive Screening (cs-10) were excluded. The criteria established in the 2019 European Working Group on Sarcopenia in Older People (EWGSOP2) and the Short Physical Performance Battery (SPPB) were applied. **Results:** A total of 111 elderly people were included, with an average age of 75 years, with an average of two comorbidities and using an average of 5.97 medications, the majority (n = 103; 90%) being female. Of these, 71 individuals were classified as probable sarcopenic and had an average score of 6.8 on the SPPB, 4 had 0 to 3 points: disability or poor ability; 22 scored 4 to 6 points: low capacity; 41 from 7 to 9 points: moderate ability and none scored from 10 to 12 points: good ability. Furthermore, 73 individuals were classified as non-sarcopenic and scored 7.8 on the SPPB. In addition, they had an average time to sit down and stand up faster than the sarcopenic patients (20.12 seconds and 26.18 seconds). **Conclusion:** Most likely sarcopenic elderly had moderate physical performance. This finding suggests that attention to this factor is necessary in the clinical evaluation and treatment of these patients.

Keywords: Sarcopenia; Physical Functional Performance; Health of the Elderly

Financial support: This study received Financial support from the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Relationship between prostate cancer risk classification, sexual potency and urinary continence with the choice of robotic prostatectomy: A retrospective longitudinal study

Relação entre a classificação de risco do câncer de próstata, a potência sexual e a continência urinária com a escolha da prostatectomia robótica: Um estudo longitudinal retrospectivo

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ABSTRACT

Introduction: It is believed that the choice of robot-assisted radical prostatectomy (RARP) is influenced by the risk of prostate cancer (CaP), by sexual and urinary functions, since the robotic method is minimally invasive and envisages the possibility of maintaining the prior functionality. **Objectives:** To identify the relationship between CaP risk classification, sexual potency and urinary continence, in addition to the possible influence of these variables on the choice of robotic prostatectomy. **Methods:** This is a retrospective longitudinal study with data from 236 patients submitted to RARP between 2020 and 2022 in two private hospitals in Belo Horizonte, Minas Gerais, Brazil. Patients with a diagnosis of CaP, naive of previous oncological treatment and RARP performed by the same surgeon were eligible. Data were collected from a database made available by the medical team, which was constituted of the medical record and the preoperative questionnaire of the responsible medical team. **Results:** It is noted that 97% of the high sexual function group had a similar classification for urinary continence ($p^2 = 0.008$). Since most were classified as high for these two variables, it's understood that individuals submitted to RARP have good pre-surgical functionality, although neoplastic severity has been diagnosed for 61.9% of the sample. Furthermore, 72% of the low-risk group had high sexual function ($p^2 = 0.018$), showing that almost 50% of the sample did not have erectile dysfunction. **Conclusion:** It was possible to understand that the risk of the disease is inversely proportional to sexual function, which is directly associated with inpatient continence. Thus, this profile of good previous functionality can be a decisive factor for choosing RARP, given the minimally invasive nature of the procedure. However, this decision is multifactorial and future studies are needed to directly assess the patient's motivation and satisfaction with outcomes obtained.

Keywords: Robotic Surgical Procedures; Prostatectomy; Prostatic Neoplasms; Sexual Health; Urinary Incontinence; Risk Assessment.

Financial support: Faculdade de Ciências Médicas de Minas Gerais (FCMMG) and Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Validation of the application of The Duke Activity Status Index questionnaire by phone call in cardiac rehabilitation program patients

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ABSTRACT

Introduction: The Duke Activity Status Index (DASI), a 12-item questionnaire that assesses daily activities such as personal care, ambulation, household tasks, sexual function and recreation activities, is a valid measure of functional capacity of patients with cardiovascular disease. When taken by healthcare providers DASI reached a correlation of $r = 0.81$ with peak oxygen uptake (VO_{2peak}) measured by cardiopulmonary exercise testing in 19-90 year-old adults. **Objective:** To investigate the validity of applying the DASI questionnaire through telephone calls in cardiac rehabilitation patients. **Methods:** This is a methodological study according to the COSMIN criteria. Participants in a cardiac rehabilitation program answered the DASI questionnaire on 2 random occasions, face to face and by telephone. **Results:** Fifty-six cardiac rehabilitation patients (64.30% men) with a mean age of 75.14 ± 10.28 years participated in this study. The mean interval between the first and the second visit was 8 (SD 4,5) days, ranging from 3 to 14 days. The DASI total score was similar in both applied modes (MD = -0.193; CI95% = -4.37 to 0.51; $p = 0.119$). Agreement was high between the two methods of administration (ICC=0.885; 95% CI, 0.643–0.838; $p < 0.05$). The Kappa coefficient ranged from 0.457 to 1.000. Item eight had the worst agreement and items one and two had the best agreement. The mean bias and 95% limits of agreement evaluated by Bland-Altman plot for average DASI applied face-to-face and the phone call versus mean difference in the DASI score applied face-to-face and the phone call was $11.9 \text{ mL.kg}^{-1}.\text{min}^{-1}$ and (15.9 to -19.3). **Conclusion:** The DASI test is valid for assessing the functional status of cardiac rehabilitation patients and can be applied over a telephone call.

Keywords: Physical Functional Performance; Cardiac Rehabilitation; Surveys and Questionnaires; Telephone Interview

Financial support: This study was funded by the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG) and Faculdade de Ciências Médicas de Minas Gerais (FCMMG).

ORIGINAL STUDY

Validation of the application of the Human Activity Profile questionnaire by phone call in cardiac rehabilitation program patients

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ABSTRACT

Introduction: The Human Activity Profile (HAP) is a 94-item self-report measure of energy expenditure or physical fitness that has been used widely in both clinical and healthy populations. With the onset of the COVID-19 pandemic, health professionals had to adapt to social distancing and saw the need to evaluate patients with validated telephone instruments. **Objectives:** To investigate the validity of applying the HAP questionnaire through telephone calls in cardiac rehabilitation program patients. **Methods:** This is a methodological study according to the COSMIN criteria. Two scores are calculated: the maximum activity score (MAS) and the adjusted activity score (AAS). MAS is the number of the most difficult task the respondent is still doing. The AAS is calculated by counting how many activities with lower values than the MAS the respondent has stopped doing and subtracting this from the MAS. Participants answered the HAP questionnaire on 2 random occasions, face to face and by telephone call. **Results:** Fifty-six cardiac rehabilitation patients (64.30% men) with a mean age of 75.14 ± 10.28 years participated in this study. The MAS was similar in both applied modes (Face-to-face: 79.11 ± 11.48 ; Phone call: 82.71 ± 7.48 ; $p = 0.101$). Similarly, The AAS did not differ in both applied methods (Face-to-face: 69.11 ± 14.18 ; Phone call: 71.21 ± 13.43 ; $p = 0.052$). Agreement was high between the two modes of administration (ICC – 0.999; 95% CI, 0.879 - 0.948; $p < 0.05$). The mean bias and 95% limits of agreement evaluated by Bland-Altman plot for average applied face-to-face and the phone call versus mean difference in the MAS and AAS applied face-to-face and the phone call were $[-4.0 \text{ mL.kg}^{-1}.\text{min}^{-1}$ and $(12.1 \text{ to } -19.3)$] and $[-2.1 \text{ mL.kg}^{-1}.\text{min}^{-1}$ and $(13.4 \text{ to } -17.6)$]. **Conclusion:** The MAS and AAS are valid and can be applied over telephone calls to cardiac rehabilitation program patients.

Keywords: Physical Functional Performance; Cardiac Rehabilitation; Surveys and Questionnaires; Telephone Interview

Financial support: This study was funded by the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG) and Faculdade de Ciências Médicas de Minas Gerais (FCMMG).

ORIGINAL STUDY

Performance of the HEART, TIMI and GRACE scores for predicting major adverse cardiovascular events and clinical outcomes in patients with acute coronary syndrome

Performance dos escores HEART, TIMI e GRACE para predição de eventos cardiovasculares adversos maiores e desfechos clínicos em pacientes com síndrome coronariana aguda

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ABSTRACT

Introduction: Acute coronary syndrome (ACS) is the main cause of morbidity and mortality. It is essential to stratify patients according to the risk of cardiovascular complications and death, to define propaedeutic and therapeutic strategies, balancing risks, and benefits of invasive and non-invasive methods. The GRACE, HEART and TIMI risk models are validated for ACS, and combine variables to calculate clinical outcomes. **Objectives:** To evaluate the performance of the GRACE, HEART and TIMI scores to predict major adverse cardiovascular events in patients with a primary diagnosis of ACS. **Methods:** Retrospective cohort of 369 patients admitted with a primary diagnosis of ACS at a teaching hospital of the SUS in Belo Horizonte in 2022. Patients in the immediate postoperative period of RVC, patients with stable DAC hospitalized only for elective coronary angioplasty, were not included, and those previously hospitalized who had an acute coronary event. Risk variables for the occurrence of major cardiovascular events were identified and the GRACE, HEART and TIMI scores were stratified. For association between qualitative variables, the chi-square and Fisher's exact tests were used. **Results:** The sample profile was male, 60.9%, and mean age 62.8 ± 12.6 . 49.7% were classified as having a non-elevation infarction. The personal antecedents most associated with DAC were: HAS, smoking, previous DAC and DM in order of prevalence. According to the rich models, DAC findings present $p < 0.0001$ for the TIMI and HEART scores and for the GRACE score $p < 0.012$, referring to the Wilcoxon Mann-Whitney test. The DAC findings in the CATE according to the risk models also showed significant values with $p < 0.001$. The occurrence of death according to risk models in the TIMI scores was $p 0.053$; HEART $p 0.01$ and SERIOUS $p < 0.001$. **Conclusion:** GRACE, HEART and TIMI scores perform well to predict major cardiovascular events and clinical outcomes.

Keywords: Acute Coronary Syndrome; Clinical Decision-Making; Risk Index; Propensity Score.

Financial support: Programa Institucional de Bolsas de Iniciação Científica (PIBIC) da Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Influence of different types of double task on cadence and gait speed of individuals with Parkinson's disease: An experimental study

Influência de diferentes tipos de dupla tarefa na cadência e velocidade de marcha de indivíduos com doença de Parkinson: Um estudo experimental

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ABSTRACT

Introduction: Parkinson's disease (PD) is characterized by motor and non-motor symptoms, such as cognitive changes. In PD, gait, when associated with other activities, may present changes in performance. **Objective:** To compare the effects of different types of double tasks on cadence and gait speed of individuals with PD. **Methods:** Cross-sectional study conducted in a private college (CAAE:14177819.8.0000.5134), where the gait of individuals with PD was evaluated with a 10-meter Walking Test in five conditions: isolated gait, double simple and complex cognitive, motor and cognitive-motor task. The paired t-test compared the performance in the tests ($\alpha = 0,05$). **Results:** 29 individuals with a mean age of 63 ± 7 years, 65% male, mean time of diagnosis of $7,4 \pm 4,5$ years and Hoehn Yahr $2 \pm 0,6$ were included. There was a significant difference in cadence and speed between all conditions. In cadence: isolated gait ($117,3 \pm 10,7$ steps/min); simple cognitive ($100,9 \pm 12,5$ steps/min; MD 16,4 IC 95% 13,7 to 19,2), complex ($102,4 \pm 14,9$ steps/min; MD 14,9 IC 95% 10,8 to 19,0); motor ($110,2 \pm 13,4$ steps/min MD 7,2 IC 95% 3,9 to 10,4); cognitive- motor ($100,1 \pm 14,5$ steps/min; MD 16,3; IC 95% 11,6 to 21,1). In speed: isolated gait ($1,19 \pm 0,14$ m/s); simple cognitive ($0,93 \pm 0,12$; MD 0,26 IC 95% 0,21 to 0,31), complex ($0,92 \pm 0,19$; MD 0,28 IC 95% 0,21 to 0,35); motor ($1,01 \pm 0,20$; MD 0,19 IC 95% 0,12 to 0,24) and cognitive-motor ($0,83 \pm 0,19$; MD 0,38; IC95% 0,29 to 0,45). **Conclusion:** Regardless of form, the inclusion of double task reduced cadence and gait speed in individuals with PD.

Descriptors: Parkinson Disease; Gait; Walk Test; Cognition; Gait Analysis.

Financial support: Setor de Pesquisa e Extensão da Faculdade de Ciências Médicas de Minas Gerais, Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Factors associated with poor sleep quality in Brazilian adults aged 50 and older

Fatores associados à má qualidade do sono em adultos brasileiros com 50 anos ou mais

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ABSTRACT

Introduction: Sleep disorders in an aging society constitute a major public health issue. Around 50% of adults aged 50 or older experience sleep problems. However, scant information exists about sleep quality distribution and determinants among older Brazilian adults. **Objectives:** Determine prevalence and key factors associated with self-reported poor sleep quality in Brazilian adults and elderly aged 50 or older. **Methods:** Exploratory descriptive study using secondary data from Brazilian Longitudinal Study of Aging (ELSI-Brazil), 2019–2021. Included 9849 participants with complete information for the variables of interest. Self-reported sleep quality was the outcome variable. Independent variables included sociodemographic, behavioral, and health indicators. Statistical analyses used Pearson's chi-square for relative frequencies and robust poisson regression for prevalence ratios (PR) with 95% confidence intervals (CI). **Results:** The prevalence of poor sleep quality was 15.6%. Factors significantly associated with poor sleep quality include male gender (PR = 0.70; 95% CI: 0.61–0.81), perceiving health as good (PR = 0.49; 95% CI: 0.40–0.60), residing in the southern region (PR = 0.68; 95% CI: 0.49–0.94), number of chronic conditions (PR = 2.52; 95% CI: 1.97–3.24 for those with two or more conditions), high alcohol consumption (PR = 2.40; 95% CI: 1.29–4.46), and poor self-rated memory (PR = 1.30; 95% CI: 1.12–1.51). **Conclusion:** Poor sleep quality was negatively associated with male gender, good self-rated health, live in the southern region; and positively associated with poor self-rated memory, excessive alcohol consumption, and the presence of multiple chronic conditions. Further research on sleep disorders is needed in order to provide a foundation for the development of public health policies, with the potential to promote the well-being and quality of life of Brazilian older adults.

Keywords: Sleep Quality; Prevalence; Elderly; Aging.

Financial support: Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Risk factors and complications associated with Diabetes Mellitus in patients treated at the Medical Sciences Outpatient Clinic of Minas Gerais

Fatores de risco e complicações associadas ao Diabetes Mellitus nos pacientes atendidos no ambulatório Ciências Médicas de Minas Gerais

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ABSTRACT

Introduction: Diabetes mellitus (DM) is a non-communicable chronic disease (NCD) characterized by a heterogeneous group of metabolic disorders that lead to elevated blood glucose concentration over an extended period. This disease is a significant cause of mortality and morbidity, and it is estimated that its prevalence will continue to rise significantly in the coming years, possibly even surpassing current projections for the next decades. Given this scenario, the need for a multi-sectoral response to address this ailment becomes evident.

Objective(s): To assess the prevalence of diabetes mellitus and its respective risk factors and associated complications in the population previously consulted in an outpatient clinic. **Methods:** This is an observational, analytical, quantitative study based on retrospectively collected data from the medical records of patients diagnosed with diabetes mellitus who were treated in an outpatient clinic between August 2019 and August 2022. **Results:** In a sample of 235 participants, 159 were female and 76 were male, with a mean age of 61.6 years. Among them, 75 had a family history of DM, 128 patients had Systemic Arterial Hypertension, 60 patients were overweight or obese, 87 were sedentary, 80 had dyslipidemia, and 28 had complications resulting from DM. **Conclusion:** It can be concluded that there is a higher prevalence of DM in female patients, and a significant association of the disease and its complications with Hypertension, family history, age, dyslipidemia, sedentary lifestyle, overweight, and obesity. The most prevalent complication observed was diabetic neuropathy. Therefore, it would be valuable to raise awareness among the population to undergo regular outpatient monitoring and laboratory tests, especially for patients with a family history of DM, with the aim of controlling DM and other NCDs that may lead to future complications.

Descriptors: Diabetes Mellitus; Diabetes Complications; Risk Factors. FAPEMIG

Financial support: Fundação de Amparo à Pesquisa do Estado de Minas Gerais – FAPEMIG.

ORIGINAL STUDY

Good prognosis factors in medical students at a health education institution in Belo Horizonte with psychological exhaustion

Fatores de bom prognóstico em acadêmicos de medicina de uma instituição de ensino em saúde de Belo Horizonte com esgotamento psicológico

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ABSTRACT

Introduction: The rate of mental health problems in medical schools has increased in recent years. Extensive workload, high demands, peer competition, sleep deprivation, lack of free time, fragile socio-emotional skills are classified as some of the stressors to which academics are subjected. These factors, if not well managed, can lead to psychological exhaustion. Preventive and curative measures must be taken to provide better quality of life and personal satisfaction to the student. **Objective(s):** analyze the main factors of good prognosis in medical students with psychological exhaustion. **Methods:** This is a cross-sectional analytical observational research that uses the questionnaires Depression Anxiety Stress Scale-21 (DASS-21) and Life Satisfaction Scale to assess self-reports of anxiety, depression and stress, in addition to measuring subjective well-being, respectively. In addition, sex, age and 28 other variables were analyzed. **Results:** 223 students from the 1st to the 12th period of the medical course at a private college were included in the research. Among the answers to the DASS-21 questionnaire, 73 (33%) of the students were screened for a possible condition of extremely severe depression, 111 (50%) had symptoms characteristics of an extremely severe anxiety and 52 (23%) were screened for a stress state in the extremely severe category. Paradoxically, 74 (33%) students were extremely satisfied with life, 69 (31%) were satisfied and 53 (24%) were fairly satisfied. **Conclusion:** It is hypothesized that despite being a course with high physical and mental strain, there is the notion that the effort will be worthwhile in the professional future. After crossing the variables analyzed with the validated questionnaires, it was observed that parameters such as study planning, good night rest, therapy, leisure time, extra-academic activities, positive perspectives regarding the future and maintaining concentration on studies were associated as good prognosis factors for psychological exhaustion in medical students.

Descriptors: Medical student; Psychological exhaustion; Mental health; Depression; Anxiety.

Financial support: Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

The impact of brain morphology in numerical-arithmetic learning of pediatric patients with hydrocephalus

O impacto da morfologia encefálica na aprendizagem numérica aritmética em pacientes pediátricos com hidrocefalia

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ABSTRACT

Introduction: Congenital hydrocephalus is characterized by an excess of cerebrospinal fluid, resulting from various underlying factors. This condition poses a risk to children due to the enlargement of ventricles, causing the pliable skull to expand and potentially affecting brain function. About one-third of children with congenital hydrocephalus exhibit intellectual disabilities. However, even those with normal IQ scores might encounter cognitive challenges, particularly in developing numerical and arithmetic skills. The impact of math difficulties on cognitive growth and social adaptation in these children is noteworthy. **Objective:** This study aims to explore potential connections between brain morphology and the acquisition of numerical-arithmetic and others cognition skills in children aged 5 to 12 with congenital hydrocephalus. **Methods:** We are doing a prospective observational study involving pediatric patients with hydrocephalus who are receiving care at the neurosurgery clinic of a Hospital in Belo Horizonte, Minas Gerais. We will compare the performance of children with hydrocephalus to that of typically developing children, while also considering age/schooling and intelligence factors. **Results:** Initial analysis suggests that children with congenital hydrocephalus encounter challenges in overall learning, particularly in mathematics. Furthermore, most of them face difficulties in fine motor skills. It is important to note that these findings are still in the phase of data analysis. **Conclusion:** In conclusion, this ongoing study delves into the cognitive impacts of congenital hydrocephalus on the learning abilities of children. While results are still under analysis, the initial indications point towards challenges in general learning and mathematics, with a significant number of children experiencing issues with fine and gross motor skills. The outcomes of this research have the potential to offer valuable insights for tailored interventions and support to enhance cognitive development and overall well-being among children with congenital hydrocephalus.

Keywords: Congenital Hydrocephalus; Cognition; Child Development; Learning Disabilities; Neurosurgical Procedures.

Financial support: Faculdade de Ciências Médicas de Minas Gerais (FCMMG) and Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Decannulation protocol in pediatric patients: Cases series study

Protocolo de decanulação em pacientes pediátricos: Estudo de série de casos

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ABSTRACT

Introduction: Tracheostomy is a surgical procedure that establishes an artificial opening through the neck allowing the patient's upper airways to be unobstructed in order to guarantee life. To avoid or minimize complications resulting from tracheostomy, the decannulation process is indicated as soon as possible. There is no consensus in the literature about the best assessment protocol for decannulation. Despite all the risks, decannulation in children is not standardized and, in the absence of a defined protocol, this procedure varies between hospital institutions. **Objective:** To describe the rate of success of the decannulation protocol used in the *Serviço de Assistência Integral à Criança Traqueostomizada* (SAIT) in the decannulation of pediatric patients who underwent tracheostomy. **Methods:** This is a retrospective observational study. Data were collected from medical records of decannulated patients followed up in the *Hospital Infantil João Paulo da Fundação Hospitalar de Minas Gerais* (FHEMIG) in Belo Horizonte, Minas Gerais between 2011 and 2021. The success of decannulation was defined as no need for a new tracheostomy or death. **Results:** 106 children aged between 2 months and 16 years, with a mean age of 3,9±4 years old were evaluated. 75% of the patients underwent tracheostomy due to upper airway obstruction, 60% of these due to acquired subglottic stenosis. At the beginning of the decannulation protocol, 5.5% of the patients had moderate oropharyngeal dysphagia, while 80.4% had normal swallowing. Correction in the upper airway pre-decannulation was performed in 39.5% of the patients, dilation in 63.8% and endoscopic correction was performed in 55.3%. After performing the decannulation, none of the patients had complications. **Conclusion:** From the results obtained, we can conclude that the proposed protocol is 100% effective, since the rate of complications such as death and need for recannulation was 0%.

Keywords: Tracheostomy. Pediatrics. Medical protocols. Weaning.

This work received Financial support from the Fundação de amparo à pesquisa de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

Profile of patients undergoing cardiac and hemodynamic surgical procedures in a university hospital pre and peri pandemic

Perfil dos pacientes submetidos a procedimentos cirúrgicos cardíacos e hemodinâmicos em um Hospital Universitário pré e peri pandemia

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ABSTRACT

Introduction: During history, the surgical field has undergone changes in relation to the techniques and risks associated with the procedures. However, the course of medicine and surgery were altered by the emergence of the COVID-19 pandemic, generating changes in internal hospital protocols and restrictions of environments with social isolation, aiming to reduce the risk of contamination by the virus, giving priority to urgent and emergency surgeries, as well as the implementation of new pre, intra and postoperative care. **Objective:** To describe the epidemiological profile of patients undergoing cardiac and hemodynamic surgeries during the period prior to and during the SARS-CoV-2 pandemic. **Methods:** A cross-sectional observational study was conducted in the database of medical records of the University Hospital between 2018 and 2021. Inclusion criteria: patients who underwent cardiac and hemodynamic surgical procedures, with complete medical records and older than 18 years, regardless of gender. **Results:** Data were collected from the medical records of 137 patients who underwent cardiac and hemodynamic surgeries at the hospital, 55 patients from the pre-pandemic period and 82 patients during the pandemic. During the pandemic, there was an increase in the total number of hospitalizations and a change in gender predominance, previously 44% in females and 63% in males. The median age was lower in the peri-pandemic period (67 versus 65 years), grouping both sexes. There is also an increase in the hospitalization of patients with Systemic Arterial Hypertension, going from 41% to 59% and of Diabetes Mellitus, increasing from 39% to 61%. **Conclusion:** Although the project is not yet complete, it is possible to extract relevant data. It can point to a higher proportion of the male population at admission, a higher prevalence of hospitalizations of patients with chronic conditions such as hypertension and DM, and a change in the age profile of patients.

Descriptors: Surgicenters; SARS-CoV-2; Cardiovascular Surgical Procedures; Hemodynamics; Hospitals, University.

Financial support: Supported by the Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Surgical wound infection: A study about prevalence, risk factors and alarm signals among patients at a university ambulatory

Infecção de ferida operatória: Um estudo acerca da prevalência, fatores de risco e sinais de alarme entre os pacientes de um ambulatório universitário

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ABSTRACT

Introduction: Surgical wound infections are commonly observed in the Brazilian surgical context, ranking as the third most common infection associated with healthcare. The incidence of these infections is influenced by a range of factors, from the type of pathogen to the actions of healthcare professionals and the patient's own characteristics. In this sense, a clear understanding of post-surgical guidelines is essential for patients. **Objective:** To evaluate the incidence of surgical wound infection in patients undergoing minor procedures at a University Clinic. Additionally, the study aims to identify and analyze the main risk factors associated with the infection and to outline a detailed profile of the patients. **Methods:** A cross-sectional approach was adopted, combining quantitative and qualitative methods. 73 patients from the surgical outpatient clinic participated voluntarily, including both genders. Data collection was performed using a structured questionnaire designed to capture pertinent information. Subsequently, the answers were systematically analyzed by a team of specialists. **Results:** Although the research is ongoing, preliminary data reveal a dominance of females (83%). Participants were aged between 39 and 80 years. Notably, 66% had not completed their academic studies. Regarding lifestyle and health habits, 33% of patients reported smoking, alcohol consumption, and obesity. In terms of post-operative complications, 50% experienced symptoms such as pain and bleeding, while 33% observed the presence of pus in the wound. Furthermore, 66% reported itching and redness. **Conclusions:** Our preliminary findings underscore the critical importance of providing clear and comprehensive instructions to patients. Education about post-operative care, symptom identification, and management is paramount. This study suggests that targeted educational strategies can be a valuable tool in preventing post-operative complications and promoting patient health.

Keywords: Surgical wound infection; Risk factor; Signals and symptoms.

ORIGINAL STUDY

Association between anxiety, depression and stress and Irritable Bowel Syndrome in medical students

Associação entre ansiedade, depressão e estresse e Síndrome do Intestino Irritável em estudantes de Medicina

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ABSTRACT

Introduction: Stress, anxiety and depression are recurrent psychological disorders nowadays. Medical students are recurrently affected by these pathologies, due to the high demands of the course. Irritable Bowel Syndrome (IBS) also affects the quality of life of students, making their tasks difficult and debilitating their performance. **Objective:** To determine the relation between anxiety, stress and depression and IBS in medical students. **Methodology:** Cross-sectional study with medical students at a private college in Belo Horizonte. Levels of stress, anxiety and depression were assessed using the DASS-21 scale, while IBS was indicated using the Rome IV criteria. A questionnaire was created by joining the mentioned forms of evaluation and answered online. A total of 202 responses were obtained, which were analyzed by the researchers, but will still be submitted to statistical analysis for later scientific dissemination. **Results:** A quantitative data analysis was performed. Regarding stress in medical students, 13.36% have mild, 16.33% moderate, 20.29% severe and 7.92% extremely severe. With regard to anxiety, 6.93% have mild, 16.5% moderate, 7.92% severe and 18.81% extremely severe. Concerning depression, 13.36% have mild, 22.2% moderate, 5.44% severe and 7.92% extremely severe. It can also be seen that 25 people (12.37%) have IBS and among these, 44% have severe stress and 20% extremely severe, 16% have moderate anxiety, 8% severe and 48% extremely severe, and 32% have moderate depression, 12% severe and 8% extremely severe. **Conclusion:** The data reveal that medical students have high rates of mental disorders and most of those who have IBS have some of these pathologies. It is not possible to conclude whether there is a causal link between these pathologies and IBS, but there is strong evidence that they are related.

Descriptors: Physiological Stress; Anxiety; Depression; Irritable Bowel Syndrome; Medical Students.

Financial support: Faculdade de Ciências Médicas de Minas Gerais and PIBIC/FAPEMIG scholarship.

ORIGINAL STUDY

Validity of the modified sphygmomanometer test and 1 maximum repetition test for individuals after chronic stroke

Validade do teste do esfigmomanômetro modificado e teste de 1 repetição máxima para indivíduos pós acidente vascular cerebral crônico

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ABSTRACT

Introduction: Individuals after stroke have muscle weakness associated with disability. It is evident that the measurement of muscle strength is extremely important for the clinical practice of rehabilitation. It is known that the one maximum repetition (1MR) test is effective in identifying the ideal exercise load. However, the extension chair, a widely used instrument for this outcome, has a high cost and transport limitation. Therefore, it is hypothesized that it is possible to use the Modified Sphygmomanometer Test (MST), made through a simple and easily accessible instrument, to measure the load on the knee extensor muscles. **Objectives:** To investigate the concurrent validity between the modified sphygmomanometer and the extension chair for measuring one maximum repetition in individuals after stroke. **Methods:** This is a methodological study approved by the Research Ethics Committee (CAAE:12606919.4.0000.5134). The 1MR protocol was performed to find the maximum load supported by the individual and the MST was performed requesting the maximum knee extensor strength, the protocols were performed in a randomized order. Pearson's Correlation Coefficient was used to investigate the association between the variables, with $\alpha = 0.05$. **Results:** Fifty individuals were included, with a mean age of 53 years, 53% male, and a mean time after stroke of 27 months. A statistically significant correlation of moderate magnitude was found between the 1MR and the MST of knee extensors in the paretic and non-paretic limb in post-stroke individuals ($r = 0,431$; $r = 0,377$; $p < 0,01$, respectively). **Conclusion:** It was observed validation between the modified sphygmomanometer and the extension chair for measuring one maximum repetition in individuals after stroke.

Descriptors: Stroke; Muscle strength; Exercise.

Financial support: This work received financial support from the Fundação de Amparo à Pesquisa de Minas Gerais (FAPEMIG).

ORIGINAL STUDY

ChatGPT as an auxiliary tool in the management of gastrointestinal health

ChatGPT como ferramenta auxiliar na gestão da saúde gastrointestinal

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ABSTRACT

Introduction: ChatGPT is an artificial intelligence algorithm that enables virtual dialogue with humans. This feature has been used in healthcare research, such as aiding patient management, involving diagnostic hypotheses (DH), and courses of action. However, studies validating ChatGPT as an effective tool for gastrointestinal healthcare practice are still scarce. **Objective:** To investigate ChatGPT as a tool for managing gastrointestinal health, comparing DH, management, and therapeutic plans with medical records from an outpatient clinic linked to a university hospital. **Methods:** Power calculations were conducted with 80% power and 5% significance level, resulting in 375 evaluated medical gastrointestinal records. Patient data on DH, supplementary examination, and medication prescriptions will be tabulated. Following this, questions regarding these topics will be posed to ChatGPT, and the responses analyzed. A comparison will be made between ChatGPT's and the physician's course of action, calculating the correct responses by ChatGPT. Ultimately, it will be measured whether the correct answer or errors are more associated with rare or common diseases. A clinician in the field will judge whether recorded conditions are indeed rare. **Results:** Preliminary results show that ChatGPT accurately provided 62% DH, 58% course of action recommendations, and 90% medication indications. However, ChatGPT was unable to provide the dosage/duration of medication use. The final data are still being processed and will include rare/common disease analysis and sensitivity of the responses in this context. **Conclusion:** Our study demonstrates that ChatGPT is useful yet it's not capable of replacing the action of human professionals, especially in the prescription of medication with adequate dose and days of treatment. Nevertheless, ChatGPT can be a contributing tool in terms of diagnosis, prevention, and education in gastrointestinal health, given its potential for accurate responses.

Keywords: Artificial Intelligence; ChatGPT; Gastrointestinal; Delivery of Health Care.

Financial support: Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

From bench to bedside: RAS/MAPK and PI3K/AKT pathway gene mutations as diagnostic markers in histiocytic sarcoma

Da bancada para a cabeceira do doente: Mutações nos genes das vias RAS/MAPK e PI3K/AKT como marcadores de diagnóstico no sarcoma histiocítico

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ABSTRACT

Introduction: Histiocytic sarcoma is a rare and aggressive haematologic malignancy that can share morphological characteristics with various large cell neoplasms, such as large B-cell lymphoma and anaplastic large-cell lymphoma. A recent investigation revealed that mutations affecting the genes of the RAS/MAPK and PI3K/AKT signaling pathways are genetic hallmarks of this tumor. **Objective:** To investigate the presence of gene mutations in the RAS/MAPK and PI3K/AKT pathway in two distinct cases of histiocytic sarcoma to appraise the value of molecular assessment as an auxiliary tool for the diagnosis of the disease. **Methods:** Two formalin-fixed paraffin-embedded (FFPE) samples were retrospectively collected. After histopathological analysis and immunohistochemical characterization, DNA extraction was done. Conventional polymerase chain reaction (PCR) followed by Sanger sequencing was performed to identify mutations in RAS/MAPK and PI3K/AKT signalling pathway genes. **Results:** A missense gain-of-function pathogenic mutation involving the *PIK3CA* gene (c.3133Gp.Asp1045Tyr – p. D1045Y) was found in one case. The tumour also harbored an SNP mutation (c.156C>T – L47L) in the *KRAS* gene. The other sample showed a wild-type genotype for the genes screened. **Conclusion:** The presence of some the previously reported genetic alterations in 1/2 histiocytic sarcoma samples corroborate that RAS/MAPK and PI3K/AKT pathway genes aberrations may underlie the tumour pathogenesis and be diagnostic markers for the disease. These results pave the way for the use of molecular assessment as an auxiliary diagnostic tool for histiocytic sarcoma and support RAS/MAPK and PI3K/AKT pathway genes as molecular markers for the development of targeted therapeutic strategies.

Keywords: Histiocytic sarcoma; RAS/MAPK; PI3K/AKT; molecular hallmarks; diagnosis

ORIGINAL STUDY

Social and behavioral factors of women blood donors and their partners: An analysis to understand HIV risk behaviors in pre-donation clinical screening

Fatores sociais e comportamentais de mulheres doadoras de sangue e seus parceiros: Uma análise para entender comportamentos de risco para HIV na triagem clínica pré-doação

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ABSTRACT

Introduction: The pattern of HIV cases in Brazil has changed with an increase in the number of infected women, which may affect the residual risk of HIV transmission in blood donations. In order to reduce this risk, the social and sexual behavior of women and their partners should be explored during pre-blood donation clinical screening. **Objectives:** We aim to analyze the social and behavioral profile among female blood donors and their partners to improve blood donation candidates' screening. **Methods:** Social and behavioral data of female donors were obtained from April 2009 to March 2015 in four large Brazilian blood centers. A cross-sectional Latent Class Analysis (LCA) was used to identify patterns of behavior based on the participants as well as their sexual partners' characteristics. **Results:** 383 female blood donors were divided into two distinct risk profile classes: in Class 2 with 100% HIV-negative individuals, 97.8% have a primary partner and 33.3% completed higher education or a master's degree. And in Class 1 with 68.8% of HIV-positive individuals, 37.5% completed elementary school or were illiterate, and, concerning partners, this class had a predominance of women with a friend or known partner, unaware of partner HIV status and unprotected vaginal intercourse. **Conclusion:** Lower educational level, a higher number of sexual partners, and unawareness of the partner's HIV status are the main variables associated with a higher risk of HIV positivity among Brazilian female blood donors, which should be considered in pre-donation clinical screening.

Descriptors: HIV; Women; Blood donors; Health risk behaviors.

Financial support: This project was supported by the Fundação Educacional Lucas Machado (FELUMA) of Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG) linked to the Master's Academic in Health Sciences.

ORIGINAL STUDY

Gender-related differences in clinical characteristics of stroke patients in acute conditions

Diferenças relacionadas ao sexo nas características clínicas de pacientes com acidente vascular encefálico em quadros agudizados

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ABSTRACT

Introduction: Cerebrovascular accident (CVA) is one of the most important causes of death in the world and is caused by obstruction or rupture of one or more cerebral arteries, generating hypoxia and neuronal damage. The clinical features that distinguish the outcome of stroke in women and men are poorly understood. **Objective:** To differentiate gender-related clinical parameters in post-stroke patients in acute conditions. **Methods:** Cross-sectional observational study with a quantitative approach, carried out through the analysis of medical records with the clinical diagnosis of ischemic or hemorrhagic stroke admitted to a reference hospitalization unit for stroke treatment in a hospital in Belo Horizonte / MG. The sample consisted of 50 male and 50 female patients. **Results:** The average age is 69 years for men and 64 to women. The most common type of stroke was ischemic in both sexes corresponding to 88% of men and 86% of women in the study. The most common risk factor for both men and women was hypertension, which was present in 60% of men and 68% of women. The most frequent symptom at stroke presentation was dysarthria, occurring in males in 32% and in females in 34%. The main treatment for men and women is the combination of statins and aspirin which was used in 60% of men and 58% of women. **Conclusion:** It is possible to conclude that women had a lower average age at stroke occurrence and a higher prevalence of hypertension compared to men. However, it is necessary to investigate the medium and long term post-acute outcomes in the recovery of men and women.

Keywords: Stroke; Gender and Health; Vascular Diseases.

Financial support: Cantelli, MN received a scientific initiation scholarship funded by Fundação Educacional Lucas Machado in accordance with the PROBIC (2/2022).

ORIGINAL STUDY

Lateral septum pathways of anxiety

Vias da ansiedade do septo lateral

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ABSTRACT

Introduction: The lateral septum (LS) is a part of the limbic system and makes connections with many different parts of the brain, regulating anxiety behaviors by unknown circuits. **Objective:** To describe the LS inputs and outputs involved in the control of anxiety. **Methods:** As the first step of this scientific study, it was made a research and analysis of experimental articles in the base data PubMed, selecting those that had used neuromodulation techniques in mice, such as optogenetic or chemogenetic manipulation. 31 articles were included for the writing of the base text of this study. **Results:** The literature review has shown a vast amount of LS pathways related to manipulating anxiety behaviors, which includes inputs to and outputs from the LS. Amongst them, it is possible to quote neurons with different origins and projections to distinct brain areas, including the following circuits as an example: dorsal lateral septum (dLS) containing neurons with vesicular GABA transporter projecting to the lateral hypothalamus (LH); LS GABAergic neurons to the LH; LS GABAergic neurons to the horizontal limb of the diagonal band; LS GABAergic neurons to the ventrolateral area of the ventromedial hypothalamus (VMHv); ventral hippocampus cells to the LS; the circuit dorsal hippocampus CA2 neurons→dLS→ventral lateral septum (vLS)→VMHv; hippocampus CA3 GABAergic neurons and CA3 glutamatergic neurons to vLS and dLS, respectively and paraventricular hypothalamus glutamatergic neurons to the LS. Each one of these circuits has an important role either in manipulating anxiety-like behaviors, inducing it, or as anxiolytic. **Conclusion:** This data has demonstrated that the lateral septum plays a major role in manipulating anxiety, which relates to an enormous quantity of LS inputs and outputs that can be either anxiolytic or anxiogenic, meaning a promising tool in anxiety control and in the understanding of the pathways and mechanisms of this disorder.

Keywords: Anxiety; Lateral septum; Pathways.

ORIGINAL STUDY

Influence of the use of positive airway pressure and mandibular advancement splint on the arterial rigidity of patients with Obstructive Sleep Apnea Hypopnea Syndrome

Influência do uso da pressão positiva e do aparelho intraoral de avanço mandibular na rigidez arterial de pacientes com Síndrome da Apneia Hipopneia do Sono

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ABSTRACT

Introduction: The condition known as Obstructive Sleep Apnea Hypopnea Syndrome (OSAHS) is marked by frequent occurrences of complete or partial blockage of the air passages during sleep. OSAHS often goes undiagnosed and untreated, creating a notable public health concern due to its widespread occurrence in the overall population and its far-reaching physiological effects. Research findings support the idea that OSAHS independently adds to the likelihood of developing cardiovascular diseases (CVD), with arterial rigidity standing out as a key marker of CVD connected to this syndrome. **Objective:** Assess the effects of using Positive Airway Pressure (PAP) and the Mandibular Advancement Splint (MAS), considered the only effective non-surgical treatments for OSAHS, on arterial rigidity and quality of life in patients with OSAHS. **Methods:** This study is designed as a cross-sectional observational investigation, wherein participants are being chosen through a review of medical records while adhering to specific inclusion and exclusion criteria. The quality of life is assessed through the Quebec Sleep Questionnaire (QSQ), whereas to gauge arterial rigidity in a non-invasive manner, measurements of Pulse Wave Velocity (PWV) and Augmentation Index (AIX) are taken using the Mobil-O-Graph®—the Pulse Wave Analysis Monitor (Mobil-O-Graph, IEM, Germany). **Results:** The preliminary examination of the data reveals an improvement in the hypopnea apnea index and quality of life in patients who adhere to a treatment method; however, the findings remain incomplete due to the ongoing nature of data collection. Therefore, a comprehensive assessment and conclusive outcomes are pending until all relevant data have been obtained and rigorously analyzed. **Conclusion:** Comparison of PAP and MAS treatment outcomes for OSAHS is limited. Understanding treatment benefits is vital for proposing effective interventions and control strategies against CVD impact in OSAHS patients.

Keywords: Sleep Apnea, Obstructive; Continuous Positive Airway Pressure; Occlusal Splints; Cardiovascular Diseases.

Financial support: This research is sponsored by the PROBIC funding provided by Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Body mass index association with AIX@75 and total vascular resistance in children and adolescents with obesity

Associação do índice de massa corporal com AIX@75 e resistência vascular total em crianças e adolescentes com obesidade

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ABSTRACT

Introduction: Children and adolescents with obesity show premature aging of the arterial system, as assessed by the main arterial stiffness indices. **Objectives:** To characterize the vascular system and verify the association of body mass index (BMI) with vascular and hemodynamic parameters and arterial stiffness indices. **Methods:** This is a cross-sectional, prospective and analytical study involving children and adolescents of both sexes with obesity determined by two standard deviations above the predicted BMI for age. Those using medication and with comorbidities were excluded. Cardiovascular parameters were non-invasively measured using the Mobil-O-Graph device – the pulse Wave Analysis Monitor (IEM, Stolberg, Germany), a cuff-based oscillometric device. Peripheral and central vascular pressures, hemodynamic parameters (systolic volume, cardiac output, cardiac index, total vascular resistance and heart rate) and arterial stiffness indexes (augmentation index, AIX@75 and pulse wave velocity) were evaluated. **Results:** the sample consisted of 30 children and adolescents. The mean age and body mass index (BMI) were 11.7 ± 2.05 years and 28.01 ± 4.33 kg/m², respectively. Peripheral mean systolic blood pressure was 115.2 mmHg (97 to 135.3 mmHg) and diastolic was 71.64 (58.70 to 85 mmHg). Central mean systolic blood pressure was 100.9 mmHg (87.30 to 111.7 mmHg) and diastolic was 73.66 (60.30 to 86 mmHg). The BMI correlated positively with AIX@75 ($p = 0.0240$ and $r = 0.4415$) and with total vascular resistance ($p = 0.0232$ and $r = 0.435$), and negatively with stroke volume ($p = 0.0417$ and $r = -0.4021$). **Conclusion:** The positive association between BMI and AIX@75 can be partially attributed to the reduction in vascular compliance. These findings indicate an increased propensity for the early onset of adverse cardiovascular outcomes.

Keywords: Childhood obesity; vascular stiffness, pulse wave velocity, vascular compliance.

Financial support: This study was funded by the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (Fapemig) and Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Eating disorders in medicine students at a faculty of Minas Gerais, Brazil: Prevalence, psychological and sociocultural aspects

Transtornos alimentares em estudantes de medicina de uma faculdade de Minas Gerais, Brasil: Prevalência, aspectos psicológicos e socioculturais

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ABSTRACT

Introduction: The image-perfect culture is heavily publicized by the media, which leads to the frustration of not living up to imposed standards. Associated with this context and considering the high workload of medical students, alternative and inadequate ways of achieving these models emerge. The increase in cases of eating disorders, as well as the impacts on the physical and mental balance and the high suicide rate of these students, worries health professionals, who seek to understand their etiology to adapt possible prevention and treatments.

Objective: To assess the prevalence of risks of developing eating disorders by medical students from a university in Minas Gerais, considering the psychological and sociocultural aspects involved. **Methods:** A descriptive, observational and cross-sectional study was carried out using an online questionnaire answered voluntarily by 201 medical students from this faculty of Minas Gerais, Brazil. **Results:** Regarding the SCOFF-BR questionnaire, approximately 37.8% were at risk for developing eating disorders. Of this group at risk, 85.5% are female, in addition to being generally younger than 25 years old (92.1%), a greater tendency to be dissatisfied with their own bodies (79%), to stop doing something because of physical embarrassment (64.5%), comparing with other physiques on social networks (89.5%), having inadequate sleep (52.6%) and, finally, not considering enough time to practice healthy habits (71.1%). **Conclusion:** It was concluded that a significant number presented risks for the development of eating disorders and, consequently, the need for a complete and specialized approach, with emphasis on females. It was found that the context is multifactorial and involves causes such as high workloads, self-demands, body image distortion, low self-esteem, insufficient sleep, media influences. Such factors, isolated or not, accentuate the incidence of the disorder and highlight the need to develop strategies for the academic environment.

Descriptors: Eating Disorders; Medical students; Prevalence.

ORIGINAL STUDY

The use of the Dermatology Life Quality Index to evaluate the impact of acne on the quality of life of medical students

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ABSTRACT

Introduction: The Dermatology Life Quality Index (DLQI) is a simple and efficient strategy, largely used to determine the effect of skin conditions on the different aspects of the patient's lives. Thus, considering the large incidence of acne, especially among younger individuals, and the disease's close relation to stress, it is sensible to apply the DLQI in a group of medical students. **Objective:** To understand the impact of acne on different aspects of the well being of medical students by using DLQI. **Methods:** Cross-sectional observational study developed from the application of the DLQI test in a sample of 320 individuals who study medicine at a private college. **Results:** From the analysis of the answers given by the students, it was observed that 23.7% of the participants were "quite" or "very" ashamed/concerned with their appearance because of acne in the week prior to the application of the test. Furthermore, 12.5% of the participants reported that their skin was "very" or "quite" sensitive and/or painful. However, regarding sexual problems, a smaller impact was observed, since 94% of individuals answered that acne did not affect "anything". Regarding the practice of sports and the work/study environment, 91% and 96% of respondents, respectively, claimed that acne did not prevent "anything" from carrying out activities. **Conclusion:** By analyzing the results, it is possible to conclude that the DLQI proved itself efficient. After all, it was able to identify that the aspects of the student's lives most affected by acne were the concern over appearance and skin sensitivity, which reinforces the need for professionals to approach these facets when treating patients affected by acne.

Keywords: Dermatology; Medical Students; Acne Vulgaris.

Financial support: This research received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC FCMMG).

ORIGINAL STUDY

Impacts of the COVID-19 pandemic on immunization with pneumococcal vaccines in children and older adults in Brazil

Impactos da pandemia de COVID-19 na imunização com vacinas pneumocócicas em crianças e idosos no Brasil

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ABSTRACT

Introduction: The COVID-19 pandemic has profoundly impacted individuals, resulting in long-lasting consequences. One of the effects has been a decline in vaccine adherence attributed to physical distancing measures, potentially contributing to the resurgence of preventable diseases, and posing diagnostic challenges. Consequently, monitoring immunization rates becomes crucial as an indicator for health promotion campaigns and to mitigate the strain on healthcare systems. **Objective:** This study aims to assess the effects of the COVID-19 pandemic on immunization with pneumococcal vaccines in children and older adults in Brazil from 2018 to 2021. **Methods:** We conducted an ecological study using collected data from the Department of Informatics of the Unified Health System, focusing on the number of doses administered and vaccination coverage with pneumococcal vaccines across the country. Statistical analysis was performed by estimating a statistical model that could differentiate any underlying trend in the time series from changes associated with COVID-19 pandemics. **Results:** A total of 21,780,450 doses were administered, with a decline of 19.97% in vaccine coverage throughout the evaluation period. An overall negative trend was observed in the time series analysis for all states in Brazil. However, not all showed a statistically significant change associated with the pandemic. **Conclusion:** Therefore, it is essential for states that experienced a decline in vaccination rates during the COVID-19 pandemic to closely monitor changes in pneumococcal vaccination. Failure in the process may lead to an increase in pneumococcal infections and place an additional burden on the healthcare system.

Keywords: Vaccination; Pneumococcal Vaccines; COVID-19; Child; Aged.

Financial support: This work was supported by Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

The effect of distance learning on the mental health of medicine students at a private college in belo horizonte during the COVID-19 pandemic

Efeitos do ensino a distância (EAD) na saúde mental de estudantes de medicina de uma faculdade privada de Belo Horizonte durante a pandemia da COVID-19

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ABSTRACT

Introduction: Medical education contains several stressors such as the competitive entrance exam and long-term teaching with the aim of saving lives. During the COVID-19 pandemic, everyday stress was heightened due to uncertainties about the future in the face of this disease as well as the change from face-to-face study to distance learning. **Objective:** To evaluate the implications of distance learning for the mental health of medical students at a private college in Belo Horizonte. **Methods:** This is a cross-sectional analytical observational study, using an electronic form that aims to investigate the mental health of medical students. **Results:** The questionnaire was answered by 388 students enrolled in the institution. It was evidenced that 357 answered that the pandemic had an impact on their mental health. According to 87% of them, the aggravating factor for this was the decrease in interpersonal relationships. Although 254 students felt more tense, nervous and worried, only 171 sought psychological and psychiatric support. Furthermore, 75 students developed a new mental disorder during the pandemic while 109 had an aggravated pre-existing disorder. **Conclusion:** Social isolation and uncertainty about the future affected the mental health of medical students during the COVID-19 pandemic. In addition, the lack of psychological support added to the increased workload by the distance learning modality aggravated this situation which negatively impacted the quality of life and consequently increased the number of anxiety crises experienced by students.

Descriptors: Medical students; Coronavirus; Mental health.

Financial support: This research Project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Analysis of the entrepreneurial trajectory of the nurse in the light of the theory of Louis Jacques Filion

Análise da trajetória empreendedora do enfermeiro à luz da teoria de Louis Jacques Filion

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ABSTRACT

Introduction: Faced with the constant social and technological changes in the globalized world, the search for an innovative and disruptive practice has become essential to update demands in favor of the market. Considering entrepreneurship in the health area, it is necessary to evaluate the profile of entrepreneurial nurses to understand the development and improvement of skills during their academic training and the construction of a professional identity within entrepreneurship. **Objective:** Evaluate, in the light of Louis Jacques Filion's theory, how the undergraduate course in Nursing influenced the development of innovative thoughts and an entrepreneurial attitude. **Methods:** This is a qualitative exploratory study, where entrepreneurial nurses who have a business venture already established in the market were interviewed remotely. Data collection was performed through semi-structured interviews and the responses were analyzed using the R programming language and the IRAMUTEQ software. **Results:** Thirteen nurses located in the states of the south and southeast of Brazil and entrepreneurs from various areas of activity were interviewed. Of this total, 76.9% are female, have an average time of training in nursing of 11.4 years and most are micro-entrepreneurs. From the aspiration to build an enterprise, the nurse is faced with several challenges, but despite the obstacles encountered, a positive view of the category in coping is notable. This perspective demonstrates the adaptability performed by nurses, since even with several reports about the lack of know-how, they remained persevering in their purposes and sought strategies to improve their entrepreneurial profile on their own. **Conclusion:** Higher education institutions represent an opportunity to encourage innovation. However, there are gaps in professional training, since it is still based on traditional market models and did not represent an important factor in the decision to undertake in the analyzed sample.

Keywords: Nurse Practitioners; Entrepreneurship; Professional Practice; Qualitative Research.

Financial support: This research is sponsored by the PROBIC funding provided by Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Care profile of asthmatic children and adolescents at a university general pediatrics clinic

Perfil do atendimento de crianças e adolescentes asmáticos de um ambulatório de pediatria geral universitário

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ABSTRACT

Introduction: In childhood, asthma is the most common chronic noncommunicable disease and the main cause of morbidity. This disease also generates economic losses to the families involved and to the State, representing a public health problem in Brazil. In the country, the prevalence of asthma is 24.3% in children and 19% in adolescents, and in Belo Horizonte, 19.8% of the adolescents are asthmatic. **Objectives:** To assess the prevalence and to evaluate the care of asthma in children and adolescents treated at a university general pediatrics clinic in Belo Horizonte. **Methods:** Cross-sectional observational research through the analysis of electronic medical records of children between 6 and 18 years old that were attended at a university pediatrics clinic in Belo Horizonte between July 2020 and July 2022. **Results:** Of the 218 patients analyzed, 50 had reports of asthma indicated in the medical records, corresponding to a prevalence of 22.94%. However, only 2 (4%) patients had a functional diagnosis of asthma, and 45 (90%) patients did not have spirometry requested and/or recorded in their medical records. Symptom control was evaluated using the consensus-based GINA symptom control tool, but only 12 (24%) medical records included this data. Among these, 8 (16%) patients were well controlled, 2 (4%) partially controlled and 2 (4%) uncontrolled. **Conclusion:** The prevalence of asthma in the analyzed sample is similar to the prevalence in Belo Horizonte and in Brazil. However, the analysis of the epidemiological profile and of the quality of the treatment provided was hampered by the lack of information and standardization in the medical records. There is also a small amount of functional diagnoses, with a low request for spirometry, which may represent a medical failure and/or a problem in Brazil's public health system.

Keywords: Asthma; Child; Epidemiology.

Financial support: Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Pharmacological neuroenhancement and factors associated with this practice among students at a university in Minas Gerais

Neuroaprimoramento farmacológico e fatores associados a essa prática entre estudantes em uma Instituição de Ensino Superior em Minas Gerais

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ABSTRACT

Introduction: Psychostimulants have been used for neuroenhancement, by people without cognitive deficits, in search of better academic performance. However, indiscriminate use results in side effects, such as sleep and metabolic disturbs, which have harmful repercussions in health and quality of life. **Objective:** To evaluate the use profile of psychostimulant drugs by academics in the healthcare courses of a University in Minas Gerais. **Methods:** Descriptive observational cross-sectional cohort study, approved by Research Ethics Committee (58896022.1.0000.5134). University students from the health area participated in the survey (n = 389), through an online questionnaire addressing social and behavioral issues related to use of psychostimulants. **Results:** The prevalence of psychostimulant drug use was 21%, mainly among men (23.07%) and medical students (19.70%) and psychology (18.91%). Methylphenidate (57%) was the most used. Concomitant use of psychostimulants was reported by 37% and 35% started using them during graduation. A justifiable medical diagnosis was reported by 65% of the participants, however, a large portion had no indication for their use and 77% acquired the medication without a medical prescription. Lack of appetite (68%) was the effect most perceived by users, followed by tachycardia (58%) and insomnia (43.5%) and agitation (50%). More than 70% reported alcohol and illicit drug use, depression and anxiety, conditions that constitute contraindications to the use of such drugs. The use of psychostimulants to improve academic performance was identified in 75% of students, with more than half classifying performance in the course as good (52%) and believe that it would be different if they did not use the drug (75.8%). **Conclusion:** The profile of use of psychostimulant drugs showed significant risks in the studied population, such as: lack of justifiable medical diagnosis; use without professional supervision; concomitant use with substances likely to produce drug interactions; and presence of side effects such as tachycardia, insomnia and agitation.

Keywords: Central Nervous System Stimulants; Performance-Enhancing Substances; Students; Pharmacology.

Financial support: Moreira, JE received a scientific initiation scholarship funded by Fundação Educacional Lucas Machado in accordance with PROBIC (2/2022).

ORIGINAL STUDY

Impacts of the COVID-19 pandemic on cardiovascular surgical procedures in Brazil

Impactos da pandemia da COVID-19 na produção hospitalar cirúrgica do aparelho cardiovascular no Brasil

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Introduction: During the COVID-19 pandemic health systems all over the world have struggled to overcome such crisis. Objectives: The aim of this study was to evaluate the impacts of the COVID-19 widespread on cardiovascular hospital production in Brazil. **Methods:** Monthly data were collected in Brazil's Unified Health System Informatics Department (DATASUS) between January 2018 and December 2021 by state and region. All data were analyzed temporally using regression models (when necessary, corrected for autocorrelation of residuals). A significance level of 5% was used and data was analyzed in the software (R Core Team, 2022) version 4.3.3. **Results:** A total reduction of 22.98% of cardiovascular surgeries was seen between 2019 and 2020 and a new reduction of 6.39% between 2020 and 2021. During the first pandemic year the South region presented the greatest drop of 25.5% operations, followed by the regions Southeast (-23,95%), Northeast (-19,01%), Midwest (-18,03%) and North (-14,79%). Statistically significant variation between the medians of surgical procedures was found in regions Northeast, Midwest and South. As for Brazil and the North and Southeast regions, there was not enough sample evidence to indicate that there was a change in the pattern of surgical procedures. **Conclusions:** The overall reduction sits in congruence with governmental policies adopted during the pandemic. The significant drop could lead to an unprecedented health public problem considering cardiovascular diseases the leading causes of death worldwide. Future analyses by health managers are necessary to prevent greater impacts and backlogs in healthcare systems and to help them develop strategies to overcome a new crisis.

Keywords: Cardiovascular Surgery; COVID-19; Health System; Pandemics.

Financial support: Faculdade de Ciências Médicas de Minas Gerais

ORIGINAL STUDY

Prevalence of urinary incontinence during pregnancy and its repercussions

Prevalência de incontinência urinária na gravidez e suas repercussões

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ABSTRACT

Introduction: Urinary incontinence (UI) represents a condition that produces hygienic and social disorders for the patient, being more prevalent in women, due to the anatomy of the female pelvic floor, pregnancy and childbirth. It is worth mentioning that UI has an impact on quality of life in the pregnancy-puerperal cycle, with an increase in its incidence during pregnancy and the puerperium, with repercussions in several domains of women's lives. **Objective(s):** To assess the prevalence of UI in pregnant women, identify risk factors for its onset and assess the impacts caused on the quality of life of pregnant women with urinary symptoms. **Methods:** This is an analytical quantitative cross-sectional study, carried out from October to December 2022. Data collection was carried out with voluntary participation of 98 pregnant women in the maternity ward of a public hospital in the city of Belo Horizonte, with the objective of survey of sociodemographic data and application of a quality of life questionnaire (Qol). **Results:** Of the 98 patients interviewed, 35.1% had a positive response to the presence of urinary incontinence, with an average BMI of around 30 kg/m², of which 8 were smokers before pregnancy and 21 of them had already had one or more vaginal deliveries, relating p value <0.006. Still, when asked about the impact on quality of life, through the King's Health Questionnaire, the average of the answers approached the concept "a little" contained in the questionnaire, indicating that there was an impact on quality of life due to urinary symptoms. **Conclusion:** This study concluded that factors such as high BMI, smoking and vaginal delivery are considered important for triggering urinary incontinence during pregnancy and negatively impact the quality of life of pregnant women, resulting in a worsening of the general perception of health.

Descriptors: Urinary Incontinence; Pregnancy; Quality of Life.

Financial support: Supported by Faculdade de Ciências Médicas de Minas Gerais through PROBIC scientific initiation scholarship.

ORIGINAL STUDY

Profile of patients with Acute Coronary Syndrome at a university hospital of the public health system

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ABSTRACT

Introduction: Cardiovascular diseases (CVDs) are a group of diseases that affect the heart and blood vessels. Acute Coronary Syndrome (ACS) is the most frequent acute event and of great relevance to public health. The main risk factors of this condition are modifiable, such as: tobacco use, inadequate diets, obesity, sedentary lifestyle, harmful use of alcohol, hypertension, diabetes and hyperlipidemia. **Objective:** To identify the clinical and epidemiological profile of patients hospitalized for ACS in a university hospital of the public health system of Belo Horizonte–Minas Gerais. **Methods:** This is a retrospective cross-sectional study, approved by the Ethics and Research Committee, based on the analysis of medical records of patients admitted with a diagnosis of ACS, from January to June 2022. Patients with unlocated medical records and incomplete records were excluded. **Results:** 376 individuals (229 men) were included with a mean age of 62.8 ± 12.6 years, 62.2% over 60 years. The most prevalent clinical condition was non-ST-segment elevation myocardial infarction, representing 49.7% of the total sample. The main risk factors found were hypertension (75.5%), smoking (41.2%), diabetes (37.5%) and previous coronary artery disease (37.5%). Significant coronary obstruction was found in 75.5% of patients, of whom 83.4% were amenable to myocardial revascularization, either by percutaneous coronary intervention or by coronary artery bypass grafting. The mean length of hospital stay was 8.6 ± 7.24 days. **Conclusion:** CVDs have several modifiable risk factors that can be intervened and modified by changing lifestyle habits, aiming to reduce the number of ACS cases and unfavorable outcomes.

Keywords: Epidemiology; Myocardial infarction; Risk factors; Hospitalization; Acute Coronary Syndrome.

ORIGINAL STUDY

The degree of knowledge of patients in relation to potential risks of complications in outpatient surgery

O grau de conhecimento dos pacientes em relação à potenciais riscos de complicações em cirurgias ambulatoriais

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ABSTRACT

Introduction: Outpatient surgery, like any medical intervention, has associated risks of complications. This service is not the patient's first contact with primary health care, for this reason it is expected that he/she arrives at the consultation with an understanding of the reason for the referral and that the professional responsible for the care guides and clarifies the therapeutic proposals. However, there is a gap in the degree of knowledge and understanding of the patient regarding these referrals and the possible complications of an outpatient surgical procedure. **Objective:** To analyze the degree of knowledge about patients regarding the risks of complications in outpatient surgeries and their associated factors. **Methods:** This is a quantitative and qualitative cross-sectional study, carried out from October to May 2023. Data collection was carried out with the voluntary participation of 386 patients in an outpatient clinic in Belo Horizonte. A questionnaire was applied to assess the patient's understanding of the risks of outpatient surgical procedures. **Results:** Of the 386 patients interviewed, 145 had undergone outpatient surgeries without knowledge about possible complications, and 141 stated that the factor causing the failure was lack of medical advice. Within the total number of patients, 205 denied knowledge about possible complications, and of these, 177 did not reach higher education. Among those who had such knowledge, 121 did not obtain it through direct medical guidance. Finally, 378 patients stated that prior knowledge was important. Of these, 345 believe that with better guidance from professionals, it is possible to change this scenario and improve the care and follow-up of these patients. **Conclusion:** This study concluded that factors such as education and medical advice are considered important for patients' knowledge about outpatient surgeries. Therefore, it is important to adapt and parameterize the orientation of health professionals to patients undergoing outpatient surgical procedures.

Descriptors: Ambulatory Surgery; Postoperative Complications; Intraoperative Complications.

Financial support: This research is sponsored by the PROBIC funding provided by Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Experience report PROBIC/Master Scientific Initiation project “Relation between Attention Deficit Hyperactivity Disorder (ADHD) and serious substance use disorders in adult patients: A case control study”

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ABSTRACT

Introduction: Attention deficit hyperactivity disorder (ADHD) is a neuropsychiatric condition that affects people in all age groups. It is currently considered a neurodevelopmental disorder by the International Classification of Diseases (ICD-11), and is underdiagnosed in adults. Its lack of identification and treatment brings numerous consequences. **Objectives:** To evaluate the frequency of ADHD in adults interned for treatment of severe chemical dependence in the Therapeutic Community Rios de Água Viva (TCRAV) in Coronel Fabriciano, Minas Gerais. **Method:** A case-control study with male subjects aged 18 years or older, compared to age-matched men without chemical dependence on a 1:1 ratio. Data collection was performed by applying a questionnaire with the DSM-5 of American Psychiatric Association criteria for diagnosis of ADHD, and information on demographic profile, smoking and age of onset of psychoactive chemical substance use. **Results:** The vast majority of patients have high school education (72.7%), are not married (93.2%) and are smokers (86.4%). From the 44 patients with Substance Use Disorder (SUD) who were screened for ADHD symptoms, 22.7% screened positive for the disorder, while only 2.3% of the control group received this diagnosis ($p < 0.001$). The most used drug was alcohol (100%), followed by cocaine-crack (47%) and in third place cannabis (4.5%). **Conclusion:** Higher frequencies of ADHD symptoms were found among severe chemical dependents interned in Therapeutic Community (TC).

Keywords: Attention Deficit Hyperactivity Disorder; Substance Use Disorder; Therapeutic Community.

Financial support: Faculdade de Ciências Médicas de Minas Gerais

ORIGINAL STUDY

Knowledge and adherence to BLW or BLISS methods by parents and guardians during food introduction

Conhecimento e adesão aos métodos BLW ou BLISS por pais e responsáveis durante a introdução alimentar

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ABSTRACT

Introduction: Baby-Led Weaning (BLW) and Baby-Led Introduction to Solids (BLISS) are alternative methods of introducing solid foods aimed at promoting infant autonomy. These methods have gained popularity, sparking debates among healthcare professionals and caregivers regarding the risks and benefits associated with them. It's believed that such concerns reflect more the lack of knowledge about the methods than actual imminent risks. Thus, there's a need for research to address the acceptability and understanding of BLW and BLISS methods in the Brazilian population. **Objective(s):** To analyze the knowledge and adoption of BLW and BLISS methods among parents and/or caregivers of children during the complementary feeding. **Methods:** Administration of a questionnaire about the knowledge and practice of BLW and BLISS methods to parents and caregivers of children aged 6 months to 3 years at the outpatient clinic of a private college. **Results:** A total of 100 samples were collected, out of which 47 were familiar with only the BLW method, and 2 of these were aware of the BLISS method as well. Among caregivers who were knowledgeable, 37 (78.7%) adopted the BLW method, while none adopted the BLISS method; out of these, 26 (55.3%) had received information about the method from healthcare professionals. Regarding the drawbacks, as perceived by the practitioners, 8 (21.6%) expressed concerns about the risks and benefits, 17 (45.9%) reported mealtime mess, 10 (27%) observed food wastage, and 12 (32.4%) didn't find any negatives. The research is still in the data analysis phase, and the results have not yet been concluded. **Conclusion:** The research seeks to understand the acceptance and comprehension of BLW and BLISS methods among caregivers in Belo Horizonte. The results are expected to reveal variable knowledge, yet obtained from unreliable sources, underscoring the need for clear guidance to promote the safe adoption of these approaches.

Keywords: Infant Nutrition; Child Nutrition; Pediatrics; Complementary Feeding.

Financial support: This research project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Evaluation of the impact of educational videos on teaching the Skills Training subject

Avaliação do impacto de vídeos educativos no ensino da disciplina de Treinamento de Habilidades

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ABSTRACT

Introduction: The production of educational videos was adopted as a pedagogical tool in health skills training to improve students' technical proficiency in realistic simulation. **Objective:** To compare performance in the Objective Structured Clinical Examination (OSCE) of the skills training subject among students who produced a video related to the assessed skills and those who did not. **Methods:** Cross-sectional and retrospective study, started on November 2022, with a convenience sample of 274 medical students from a private college in Belo Horizonte. In this study, students were divided into two groups: those who performed a video of procedures learned during the semester and those who did not. The performance in the OSCE assessment, between the two groups studied, was verified in the skills of non-invasive blood pressure measurement (NIBP) abilities for the first period and nasogastric tube (NET) for the second period. The data were submitted to the Shapiro-Wilk normality test, and the One-way ANOVA test was included for non-parametric data, with a significance level of $p < 0.05$. **Results:** The score of the group that produced the NIBP video (8.38 ± 0.57) was significantly higher ($p = 0.0007$) than the score of a group that did not produce the material (7.53 ± 1.41). In contrast, the score of the group which developed the video on NET (8.19 ± 1.57) was significantly lower ($p < 0.0001$) than the score of a group that did not explore the same technique in the video (9.56 ± 0.83). **Conclusion:** Preliminary data are insufficient to determine the impact of creating educational videos on the teaching-learning process in health skills training.

Descriptors: Educational technologies; Video-audio media; Simulation training.

Financial support: Faculdade de Ciências Médicas de Minas Gerais

ORIGINAL STUDY

Ultrasonographic, hysteroscopic and anatomopathological correspondence of postmenopause patients with abnormal uterine bleeding undergoing surgical hysteroscopy at the Hospital Universitário Ciências Médicas

Correspondência ultrassonográfica, histeroscópica e anatomopatológica de pacientes pós-menopausa com sangramento uterino anormal submetidas à histeroscopia cirúrgica no Hospital Universitário Ciências Médicas

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ABSTRACT

Introduction: Abnormal uterine bleeding (AUB) is one of the most frequent gynecological complaints with great impact on women's quality of life. It can be origin by structural or non-structural causes and manifest itself acutely, chronically or as intermenstrual bleeding. The investigation of AUB is made by anamnesis, beta-hCG to exclude pregnancy, transvaginal ultrasound (TVS) and hysteroscopy. The TVS is the initial choice in the investigation because it is an accessible, low-cost and non-invasive test, well tolerated by patients. Hysteroscopy is the chosen method for direct visualization of the uterine cavity. If there is any abnormality within the cavity, an anatomopathological examination of the endometrium can be done, which is the gold standard for diagnosis of endometrial pathologies. **Objective:** Stratify the findings in TVS and hysteroscopy exams of patients with abnormal postmenopausal uterine bleeding that was submitted to surgical hysteroscopy, correlating them with the anatomopathological findings and analyzing their prevalence and incidence. AUB should be investigated, especially in postmenopausal women, because it is the main sign of endometrial cancer, which is one of the most frequent female's genital system cancers. **Methods:** Retrospective analytical observational study performed through the analysis of medical records of patients submitted to surgical hysteroscopy at a teaching hospital. **Results:** Until now, the analysis of the information obtained from the data collection has not been accomplished. It is expected, however, to find a more precise association between the results of hysteroscopy and anatomopathological examinations than those between ultrasonography and anatomopathological examinations, since TVS has lower diagnostic accuracy when compared to hysteroscopy. **Conclusion:** AUB is a frequent condition with a high impact on the patient's quality of life, apart from being related to endometrial cancer. Currently, there are few studies connecting the proposed themes and, as it is a very relevant topic, more studies need to be done.

Descriptors: Metrorrhagia; Hysteroscopy; Ultrasonography; Biopsy; Postmenopause.

Financial support: Supported by Faculdade de Ciências Médicas de Minas Gerais through the granting of a scholarship program (PROBIC-FCMMG).

ORIGINAL STUDY

Clinical and epidemiological features of post COVID-19 alopecia

Características clínicas e epidemiológicas da alopecia pós COVID-19

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ABSTRACT

Introduction: During the COVID-19 pandemic, there has been an increase in the incidence of telogen effluvium, which is a diffuse, non-scarring, self-limiting hair loss caused by a triggering factor. Unfortunately, this has a negative impact on the self-esteem of a significant portion of affected individuals. Thus, gaining a better understanding of the epidemiology and clinical aspects of post-COVID-19 alopecia helps guide the treatment of those affected, aiming to mitigate both physical and psychological adverse effects. **Objective:** To assess the clinical and epidemiological characteristics of individuals with post-COVID-19 alopecia. **Method:** A retrospective cohort study using non-discriminative exponential “Snowball” sampling technique with 204 volunteers who responded to an online questionnaire on the subject, with subsequent statistical analysis of the data. **Results:** The surveyed sample consisted of 204 volunteers, of whom 127 met the inclusion criteria of the study. Within this group, 41% reported having observed post-COVID-19 alopecia, with 25% seeking medical assistance for this reason, and 44% stating that it negatively impacted their self-esteem or caused other concerns. At a significance level of 0.05, there was an association between post-COVID-19 alopecia and the use of Azithromycin in treatment, as well as an association with female gender and the presence of symptoms such as fatigue, memory impairment, and skin irritation after COVID-19. Other associations, such as age, ethnicity, comorbidities, continuous medication use, other medications used in infection treatment, duration of acute symptoms, and complications, were not observed at the 0.05 significance level. **Conclusion:** The increase in post-COVID-19 alopecia cases is noteworthy, and it is important to consider the association of this condition with the use of Azithromycin, female gender, and other post-COVID-19 symptoms. However, further studies are needed to comprehend the true mechanisms linking this viral infection with alopecia, in order to propose new treatments and guidelines.

Descriptors: Alopecia; COVID-19; Hair.

Financial support: This project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Epidemiological profile and clinical analysis of children under investigation for congenital syphilis at a university pediatric outpatient clinic

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ABSTRACT

Introduction: Congenital syphilis is a public health problem that threatens reproductive and child health. Quality prenatal care, appropriate early treatment, assertive management at maternity hospitals, and specialized outpatient follow-up can prevent clinical repercussions in children exposed to syphilis. **Objective:** Describe the clinical-epidemiological profile of children monitored for congenital syphilis at a University Pediatric Outpatient Clinic in the metropolitan region of Belo Horizonte. **Methods:** This is a cross-sectional observational study conducted through records of patients treated on an outpatient basis by Pediatric Infectology from July 2020 to May 2023. Patients without confirmatory maternal serologies of infection during pregnancy or with other positive maternal serologies were excluded. **Results:** 60 children were included, median age 2.6 years, interquartile 1.5–3.17. Of these children, 43.33% are male, 18% were born prematurely, and 22.95% had low birth weight. The average number of follow-up visits for these children was approximately 2. Of the pregnant women, the median age was 24.5 years, with an interquartile range of 19.5-28.3. According to the diagnostic criteria of the Ministry of Health, 28 children were classified as probable syphilis and 32 children as not syphilis. Ninety percent of the pregnant women received treatment, but only 31.5% were considered adequate. Of the adequately treated pregnant women, only 25% of their children presented with congenital syphilis. Pregnant women inadequately treated or untreated (54.5% of the sample), 68% of their infants were diagnosed with congenital syphilis. **Conclusion:** Proper diagnosis and management during prenatal care and at maternity directly impact the frequency of congenital syphilis cases, and despite existing protocols and ease of treatment, the incidence of syphilis is still on the rise. The importance of correct monitoring for child outcomes and its potential benefits for the child's health is evident.

Keywords: Syphilis, Congenital; Epidemiology; Pregnancy; Signs and Symptoms

ORIGINAL STUDY

Cross-sectional cohort study on the use of electronic devices for smoking among students at the Faculdade de Ciências Médicas de Minas Gerais

Estudo de coorte transversal sobre o uso de dispositivos eletrônicos para tabagismo em estudantes da Faculdade de Ciências Médicas de Minas Gerais

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ABSTRACT

Introduction: Electronic cigarettes (EC) are devices that, through a battery, are used for the inhalation of nicotine and other aerosols. Over time, they have evolved, and currently, the most well-known type is the so-called “pods.” Among them, the most common is JUUL. The marketing and advertising by electronic cigarette companies have attracted both young people and adults, contributing to the increase in their usage. They are used for leisure and as an alternative to conventional cigarettes by these groups. **Objective:** To determine the prevalence of electronic device use among students at the Faculdade de Ciências Médicas de Minas Gerais and to assess the profile of electronic cigarette users. **Methods:** A cross-sectional study of students at the Faculdade de Ciências Médicas de Minas Gerais conducted between May 2023 and October 2023. The sample included 94 volunteers who met the inclusion and exclusion criteria defined by the research. Prevalence study using a survey and questionnaire to recognize the profile of the population using electronic cigarettes in a private health-related college and the regular consumption pattern. **Results:** The observed mean age was 22.71 years, and among the respondents in this study, approximately 66 (64%) were female respondents. It was observed that the highest concentration of respondents was in the ninth semester, comprising 46 (45%), studying Medicine with 77 (75%), and having a high family income, exceeding 25 minimum wages, with 38 (37%). **Conclusion:** The younger subpopulation shows the highest prevalence of electronic cigarette use, especially in the Medicine course, with a higher family income.

Keywords: E-cigarettes; Smoking; Prevalence.

Financial support: This project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Angiotensin-(1-7) treatment restores pulmonary and systemic changes in mice with elastase-induced pulmonary emphysema

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ABSTRACT

Introduction: Pulmonary emphysema (PE) is considered a systemic disease and its treatment is only symptomatic. Understanding the mechanisms of action and the role of possible endogenous mediators, such as Angiotensin-(1-7) [Ang-(1-7)], may provide additional tools to improve the control and treatment of patients who do not respond well to conventional treatments. **Objective:** To characterize the effect of Ang-(1-7) treatment on functional capacity and pulmonary and cardiac tissue in mice with elastase-induced PE. **Methods:** C57BL/6 mice (n = 24) were randomized into two groups: control (CTRL = 8) and EP (n = 16). The EP group received three intratracheal instillations of porcine pancreatic elastase (PPE) at 1-week intervals (0.2 IU in 50 µL saline). Seven days after the last instillation, the EP group was randomized into two groups: EP and EP+Ang-(1-7). The EP+Ang-(1-7) group received daily oral Ang-(1-7) in β-hydroxypropyl-cyclodextrin (HPβCD) for four weeks. On the 25th day of treatment with Ang-(1-7) the functional capacity was evaluated by the maximum effort test and 72 hours later the animals were euthanized and the lungs and heart were collected. **Results:** The EP group showed hyperdistension of the alveolar spaces, increased density of the alveolar airspace and reduced density of the alveolar septum. Furthermore, in the EP group, an increase in the diameter of cardiomyocytes and in the infiltration of cells in the heart was observed when compared with the CTRL and EP+Ang-(1-7) groups. Mice with PE and treated with Ang-(1-7) did not show differences in the parameters analyzed in relation to the control group. The functional capacity of the EP group was significantly lower than the CTRL and EP+Ang-(1-7) groups. **Conclusion:** The Ang-(1-7) treatment restores changes in the functional capacity, lungs and heart and that the Ang-(1-7)/Mas pathway can be utilized as a therapeutic option for pulmonary diseases and their systemic repercussions.

Keywords: Chronic obstructive pulmonary disease; functional capacity; renin angiotensin system.

Financial support: This study was funded by the Fundação de Amparo à Pesquisa do Estado de Minas Gerais (Fapemig) through the Universal projects to MGRM, Conselho Nacional de Desenvolvimento (CNPq) and Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

The impact of different geographic regions in Belo Horizonte on asthma control: A cross-sectional observational study

O impacto das diferentes regiões geográficas de Belo Horizonte no controle da asma: Um estudo observacional transversal

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ABSTRACT

Introduction: Asthma is a chronic inflammatory disease of the lower airways, which manifests itself as an obstructive ventilatory disorder, caused by episodes of bronchospasm, triggered by a variety of stimuli, social and environmental ones being of great importance. Asthma control is often associated with potentially modifiable factors, such as excessive exposure to household and environmental aeroallergens. As most of these factors change according to the geographical distribution and social status of the population, it is expected that asthma control will also be impacted by the individual's place of residence. **Objective(s):** Demonstrate the importance of knowledge about the existing correlation between asthma control by patients at a pulmonology outpatient clinic and their area of residence in Belo Horizonte. **Methods:** Two questionnaires were applied to 17 asthmatic patients being followed up at a pulmonology outpatient clinic: the *Asthma Control Test* and questions regarding the individual's socioeconomic profile. Subsequently, the analysis of the results obtained was carried out for the elaboration of a conclusion. **Results:** The association test performed at a significance level of 0.05 identified a statistically significant association between the variable (What is the region of your residence?) and the Concept, showing that people from the Northeast region are associated with the concept (Not Controlled), in addition to respondents from the Northwest region are associated with the Controlled status and people from the Venda Nova region are allocated with the Controlled status. **Conclusion:** Although a cross between the data has been demonstrated, it is important to highlight that due to the non-representativeness of the sample, all the results presented cannot be generalized to the population of interest and only reflect the behavior of the observed sample.

Descriptors: Asthma; Clinical epidemiology; Obstructive pneumopathies.

ORIGINAL STUDY

Medical students' profile at a private faculty in Belo Horizonte who presents eating disorders

Perfil de acadêmicos de medicina de uma faculdade privada em Belo Horizonte que apresentam transtornos alimentares

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ABSTRACT

Introduction: Eating disorders encompass dangerous or persistent behaviors, capable of harming physical health and psychosocial balance. University students, notably those belonging to the health field, emerge in the literature as a vulnerable population, given the considerable levels of tension, high expectations and self-demand to which they are subject. **Objective:** To analyze the characteristics of medical students who have eating disorders, especially anorexia nervosa, in a private teaching institution in the state of Minas Gerais. **Methods:** This is a cross-sectional and observational study, in progress since November 2022, involving undergraduate medical students at a private college in Belo Horizonte. Individuals who declared a diagnosis of hypothyroidism or metabolic disease were excluded. An admission sample was epidemiologically identified by sex and age, and 202 participants responded, via Google Forms, to the EAT-26. The instrument consists of 26 items that address different dimensions of attitudes related to eating, concerns about body weight, eating control behaviors and possible symptoms of eating disorders. For the analysis of categorical variables, the chi-square test will be used, and the comparison of means will be performed using the Student's T method, with a significance level of $p < 0.05$. **Results:** The sample consists of 108 individuals aged 18 to 20 years (53%), followed by 54 individuals aged over 23 years (27%) and finally, 40 aged 21 or 22 years (20%). Of these, 149 (73%) were female and 52 (27%) were male. Regarding the course cycles, 135 (66%) were in the basic cycle, 57 (28%) in the clinical cycle and 10 (6%) in the internship. **Conclusion:** Preliminary results highlight the representativeness of females in the sample. With statistical analysis, it is expected to obtain a deeper understanding of the correlations between the investigated factors and the presence of eating disorders in this vulnerable group.

Keywords: Feeding and Eating disorders; Students, Medical; Anorexia Nervosa.

Financial support: This project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Epidemiologic, clinical, and therapeutic profile of Multiple Sclerosis and Neuromyelitis Optica Spectrum patients in reference centers in Belo Horizonte

Perfil epidemiológico, clínico e terapêutico de pacientes com esclerose múltipla e espectro da neuromielite óptica em centros de referência de Belo Horizonte

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ABSTRACT

Introduction: Multiple Sclerosis (MS) and Neuromyelitis Optica Spectrum Disorder (NMOSD) are long-term neurological diseases that cause significant impairment in patients' lives. Clinical manifestations are diverse, but both diseases predominantly affect the young population. Their prevalence varies worldwide and it is believed that environmental and genetic factors are involved. Studies are necessary to improve medical care through better comprehension of the characteristics of these groups. **Objectives:** To describe epidemiologic, clinical, and therapeutic features of patients diagnosed with MS and NMOSD treated at two reference centers in Belo Horizonte. **Methods:** Retrospective assessment of medical records of patients with confirmed MS and NMOSD followed in two medical services in Belo Horizonte, from March until July 2023. Individuals older than 18 years, diagnosed with NMOSD, and individuals diagnosed with MS who have one of the phenotypes of the disease were included. The exclusion criteria were individuals under 18 years of age and individuals with diagnostic doubt. Epidemiologic, clinical, and therapeutic data were analyzed. **Results:** 61 medical records were assessed (57 from MS and 4 from NMOSD). So far, it was seen that most patients were women and white. Age at diagnosis in MS was more prevalent between 20-40 years while in NMOSD was between 41-50 years. Mental disorders, such as anxiety and depression, were the most frequent comorbidities. Demyelinating lesions were present in approximately 95% of the patients with MS who had brain MRIs, mainly periventricular ones. The most prevalent clinical manifestation was sensory symptoms. The majority of patients were medicated and had previous treatments with disease-modifying therapies. **Conclusion:** This preliminary analysis demonstrated consistency with the current medical literature on this subject. It is important to emphasize that this study has limitations including a restricted sample from two local services.

Keywords: Neuromyelitis Optica; Multiple Sclerosis; Epidemiology.

Financial support: This research was performed as a part of the Scientific Research Scholarship Program of Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Analysis of clinical and imaging findings prior to the diagnosis of endometrial cancer in women undergoing video hysteroscopy

Análise de alterações clínicas e em exames de imagem que precederam o diagnóstico de câncer de endométrio em mulheres submetidas a vídeo-histeroscopia

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ABSTRACT

Introduction: Endometrial cancer (EC) ranks among the most common uterine neoplasms and is the fourth most prevalent in women. In the absence of screening guidelines, clinical suspicion becomes pivotal for CE diagnosis. Investigations often begin with abnormal uterine bleeding, using transvaginal ultrasound as the primary approach. This aims to identify abnormal endometrial thickening, potentially leading to expanded diagnostic procedures like biopsy. Histological assessment of endometrial tissue can be done ambulatorially using the Pipelle catheter or video hysteroscopy. **Objective:** Analyze clinical indicators and imaging alterations leading to suspicion and diagnosis of endometrial cancer. **Methods:** An analytical retrospective observational study analyzed records from an teaching hospital. Data collection spanned 7 months, including SUS patients diagnosed with endometrial cancer after undergoing video hysteroscopy. **Results:** From 4129 records examined, a subset of 50 (1,2%) patients with EC was identified. Investigation revealed that 39 (78%) were over 60, and 47 (94%) were menopausal. Concerning clinical presentation, 39 (78%) reported abnormal uterine bleeding as the main issue, while 4 (8%) mentioned pelvic pain. Additionally, transvaginal ultrasound findings showed an average of 14.6mm of endometrial thickening, but it is important to note that 6 (12%) patients had a thickness < 4mm, which for many guidelines would not require further investigation. **Conclusion:** Results emphasize the ongoing challenge of EC, mainly in women over 60, who formed the majority profile. Detecting endometrial thickening, even < 4mm, underscores personalized biopsy consideration. These findings enhance understanding of endometrial cancer diagnosis, highlighting nuances influencing clinical decisions.

Descriptors: Endometrial Neoplasms; Ultrasonography; Hysteroscopy.

Financial support: Supported by Faculdade de Ciências Médicas de Minas Gerais through the granting of a scholarship program (PROBIC-FCMMG).

ORIGINAL STUDY

Prevalence of neurophobia in medicine students at a college in Belo Horizonte, Minas Gerais

Prevalência de neurofobia em discentes de medicina de uma faculdade em Belo Horizonte, Minas Gerais

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ABSTRACT

Introduction: Neurophobia is a global phenomenon defined by the fear of neurology and neurosciences by students and physicians. Worldwide, it compromises clinical practice and reduces recruitment of medical students for the field. Studies concerning this topic have shown that, rather than a prejudice, neurophobia is developed after contact with the subject, pointing to failures in education. Brazilian studies in the matter are scarce and do not have a standardized methodology. **Objectives:** To explore the prevalence of neurophobia in a private Brazilian college and to compare with previous data obtained from the same country. **Methods:** This is an ongoing cross-sectional study, developed at Faculdade de Ciências Médicas de Minas Gerais, Brazil, approved by its ethics Committee. Data was obtained online and by in-person questionnaires applied to students older than 18 years old, undergoing one of the six years of medical school. The questionnaire addressed five questions associated with previous experiences in neurology and six variables related to neurophobia. Each statement of the six variables indicated a positive-to-negative strength of agreement, where 1 point was attributed to “strongly disagree” and 5 for “strongly agree”. Data was examined through R 4.2.0. **Results:** A total of 357 responses were collected, with a mean age of 22.3 years and a prevalence of females (78%). The neurophobic group, whose participants responded 4 or 5 to fear, represented 24.9%. In general, the individuals reported low confidence and knowledge, with 69% and 56% answering 1 or 2 for these variables, and high levels of difficulty and interest, respectively, 79.2% and 52%. **Conclusions:** Students recognize the importance of neuroscience, but consider they have low knowledge and confidence, and point out the subject as difficult. Still, most participants don't have neurophobia and are interested in learning. Thus, new studies are needed to better understand causal relationships and implement changes in curriculum.

Keywords: Neurophobia; Neurology; Medical Education.

Financial support: This abstraction was supported by the a institutional scholarship from Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Hysteroscopy findings and epidemiological profile of women with subfertility

Achados histeroscópicos e perfil epidemiológico em pacientes com queixa de infertilidade

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ABSTRACT

Introduction: Infertility is defined as the incapacity to establish a clinical pregnancy after 12 months of regular and unprotected sexual intercourse. This issue impacts approximately 9% of the global population, with a higher prevalence in developing countries. Various factors, such as age, lifestyle, and environment, can influence female fertility. Among the numerous causes of female infertility are uterine and tubal factors, ovulatory dysfunction, obesity, and hormone-related disorders. Hysteroscopy is considered the gold standard procedure for the evaluation of intracavitary pathology; therefore, this exam is an important tool in infertility investigation and treatment. **Objective:** This study aims to categorize and quantify endometrial changes in infertility patients who underwent hysteroscopy while establishing correlations with epidemiological factors. **Methods:** Data from medical records of 346 patients with infertility who underwent hysteroscopy at a University Hospital between 2008 and 2022 were analyzed and subjected to statistical scrutiny. **Results:** The mean age of the patients was 33.22 years old, with an average BMI of 25.24. Around 47.1% had undergone previous uterine procedures, while only 23.41% had coexisting health issues. Among the 345 patients examined, 195 displayed visually detectable irregularities. The most frequent finding was endometrial polyps (35%), followed by synechiae (22%), leiomyoma (19.4%), endometrial hyperplasia, endometritis, and congenital uterine anomalies. Following the procedure, 172 women continued with outpatient follow-up, 41 required a subsequent hysteroscopy, and 85 were recommended for hysteroscopic surgery. **Conclusion:** The majority of female participants in this study exhibited advancing age and overweight tendencies, both of which can contribute to diminished pregnancy rates. The hysteroscopy finding demonstrates similar results to the literature data. Additional research is imperative to elucidate the potential interplay between environmental factors and endometrial irregularities in women experiencing subfertility.

Keywords: Hysteroscopy; Infertility; Reproductive Health; Health Profile.

Financial support: This project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Impacts of the COVID-19 pandemic on immunization with pneumococcal vaccines in children and older adults in Brazil

Impactos da pandemia de COVID-19 na imunização com vacinas pneumocócicas em crianças e idosos no Brasil

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ABSTRACT

Introduction: The COVID-19 pandemic has profoundly impacted individuals, resulting in long-lasting consequences. One of the effects has been a decline in vaccine adherence attributed to physical distancing measures, potentially contributing to the resurgence of preventable diseases, and posing diagnostic challenges. Consequently, monitoring immunization rates becomes crucial as an indicator for health promotion campaigns and to mitigate the strain on healthcare systems. **Objective:** This study aims to assess the effects of the COVID-19 pandemic on immunization with pneumococcal vaccines in children and older adults in Brazil from 2018 to 2021. **Methods:** We conducted an ecological study using collected data from the Department of Informatics of the Unified Health System, focusing on the number of doses administered and vaccination coverage with pneumococcal vaccines across the country. Statistical analysis was performed by estimating a statistical model that could differentiate any underlying trend in the time series from changes associated with COVID-19 pandemics. **Results:** A total of 21,780,450 doses were administered, with a decline of 19.97% in vaccine coverage throughout the evaluation period. An overall negative trend was observed in the time series analysis for all states in Brazil. However, not all showed a statistically significant change associated with the pandemic. **Conclusion:** Therefore, it is essential for states that experienced a decline in vaccination rates during the COVID-19 pandemic to closely monitor changes in pneumococcal vaccination. Failure in the process may lead to an increase in pneumococcal infections and place an additional burden on the healthcare system.

Keywords: Vaccination; Pneumococcal Vaccines; COVID-19; Child; Aged.

Financial support: This work was supported by Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Association between muscle injuries of soccer players with training and game load

Associação entre lesões musculares de jogadores de futebol com a carga de treinamento e de jogos

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ABSTRACT

Introduction: Football is the most popular sport in Brazil. In the last 10 years there has been an increase in the visibility of the championships and also an increase in the training and game load. In addition, there was also an increase in the frequency of musculoskeletal injuries. In this way, it is questioned whether there is a relationship between the number of injuries with training load and the number of games. **Objective:** To evaluate if there is a relationship between internal training load (assessed by the subjective perception of effort and recovery of the athletes) with muscle injuries that occurred during a season in a category under 20 years old of a Serie A football team. **Methods:** Analysis of the questionnaires already existing in the club of perception of effort and recovery, as well as calendar of games and training, as well as the occurrence of muscle injuries in athletes. **Results:** Most injuries occurred during training 69.9%, the most affected muscles were 18.4% in the biceps femoris and 17.5% in the hip abductor and also in the rectus femoris, the striker position was the most prevalent, more than half of the players classified their sleep as regular and measures of physical exertion in the weeks before the injury were higher compared to the rest of the season. **Conclusion:** After analyzing the data, it is possible to conclude that the training load in the pre-injury period was higher compared to previous weeks and the athletes perception of effort was high, which indicates a training overload.

Keywords: Injury; Muscular; Skeletal; Effort; Recovery

Financial support: This project received support from the Fundação Educacional Lucas Machado (FELUMA) of the Faculdade de Ciências Médicas de Minas Gerais (FCMMG) through the granting of a scientific initiation scholarship from the Programa de Bolsas de Iniciação Científica (PROBIC-FCMMG).

ORIGINAL STUDY

Analysis of the characteristics of different brands and models of running shoes

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ABSTRACT

Introduction: Some characteristics of running shoes, such as cushioning, stiffness, comfort and weight, have already been associated with injury and improved performance. Therefore, the relationship between the type of footwear and its influence on performance is an important subject of debate and speculation. This can be explained by the wide variety of brands, the frequent changes and poor description of its characteristics, among others. **Objective:** Assess and compare the characteristics of different running shoes, aiming to provide useful information for choosing a model. **Method:** A cross-sectional study was carried out, where different characteristics of running shoes from different brands were measured. A total of 214 shoes were selected, divided into female and male models, with sizes ranging from 34 to 43. Two researchers were trained and independently assessed the following variables: cushioning, flexibility, weight and durability. To ensure the reliability of the results, the inter- and intra-rater inter- and intra-rater correlation indices (ICC) of the measurements were checked. Measurements greater than 0.7 were considered appropriate. The results were analyzed according to the variation of the items in relation to the two numbers (left and right foot) of each model. **Results:** Measurement reliability results indicate substantial inter-rater agreement for each of the variables, with the exception of mean midsole hardness. Regarding the correlation between several variables and their numbers, it is possible to notice that some variables have a low correlation, while other variables have a high correlation (midsole height, with $r = .17$ and volume, with $r = .94$, respectively). **Conclusion:** It is noticeable that different types of footwear may have different measures of characteristics according to each brand and model. Thus, it is necessary to develop new cross-sectional studies to analyze this relationship of the measures with the performance or injury of the athletes.

Keywords: physiotherapy, footwear, running shoes.

ORIGINAL STUDY

Epidemiological profile of patients attended by diagnostic hysteroscopy in a university hospital: A retrospective study

Perfil epidemiológico das pacientes atendidas pela histeroscopia diagnóstica em hospital universitário: Um estudo retrospectivo

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ABSTRACT

Introduction: Ambulatory hysteroscopy is a minimally invasive procedure that allows direct visualization of the uterine cavity without need of general anesthesia or surgical center usage, contributing to cost reduction and patient adherence. Currently it is considered to be a gold-standard method of diagnosis and therapy in many intrauterine affections. An evaluation of clinical profiles of patients that undergo this procedure is an important nuance to be studied. **Objective:** To build an epidemiological profile of patients who were attended by a hysteroscopy service in a teaching hospital. **Methods:** It is a retrospective cohort study, which expects to analyze epidemiological characteristics and hysteroscopic findings observed in patients examinations in a teaching hospital between 2011 and 2022. **Results:** 3804 women patients were included, between the ages of 18 and 92, with an mean age of 49,9 years old. 44,6% were post-menopausal. The majority of women presented some comorbidity (56%), high blood pressure being the most common, affecting 39% of them. The main complaint was abnormal uterine bleeding (44%), followed by asymptomatic patients with indication for endometrial research (43%). Regarding ultrasonography, 3235 exams were documented. The main findings were endometrial thickening (40%) and polyps (33%). All patients went under hysteroscopy and 80% of them presented exam alterations, 50% of them being polyps. Other affections include: endometrial thickening (19%), leiomyoma (12%) and cervical stenosis (11%). Finally, 394 biopsies were performed during hysteroscopy exam. 61% of them corresponded to polyps, with 15% of them being suggestive of malignancy, related to endometrial cancer. **Conclusion:** It was possible to trace a consistent epidemiological profile of women submitted to ambulatory hysteroscopic in Brazil. The data is concordant with international literature on the subject. Hysteroscopy has proved itself an efficient and resolute method for uterine cavity investigation.

Keywords: Hysteroscopy; Uterine Diseases; Health Profile.

Financial support: Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Location and traceability of patients in a medical sciences ambulatory in Belo Horizonte

Localização e rastreabilidade de pacientes em um ambulatório de Belo Horizonte

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ABSTRACT

Introduction: Health management aims to optimize resource utilization and enhance service quality. Management teams require access to reliable information regarding institutional processes. In this context, patient flow stands as a domain lacking precise indicators due to its indirect measurement, constraining the quality of information about service deliveries in these locales, thus complicating issue diagnosis and solution implementation. **Objective:** To develop an automated, real-time indoor patient tracking solution capable of generating performance indicators and reports for healthcare service flow. **Method:** The initial stage entails analyzing patient flow at a health clinic, followed by a manual simulation of an automated solution to pinpoint pain points impacting the monitoring system's quality. The second stage encompasses outlining and validating the solution with the healthcare service's administrative team. The third stage focuses on the development of a functional prototype. Herein, an indoor positioning system based on Bluetooth Low Energy (BLE) was devised. The proposed detection system features a receiver positioned within an area resembling a medical office. The specific user location is determined by capturing the Raw Received Signal Strength Indicator (RSSI) from the connected BLE transmitter, with data transmitted to a researcher-constructed database. Moreover, a dashboard was fashioned to display pertinent data for the clinic management team, facilitating validation of the obtained indicators. **Results:** The outcomes demonstrate the system's capability to accurately track user location indoors with an accuracy of nearly 67%, displaying potential in identifying indoor movement patterns. Alterations in the position of user-carried BLE transmitters and variances in the utilized device hardware impact tracking accuracy. **Conclusion:** Envisioning the potential to heighten accuracy through device triangulation and signal loss algorithms, a testing session is proposed. The quality of BLE device hardware notably influences signal capture and analysis, necessitating system standardization for subsequent testing. The viability of BLE device utilization and large structure mapping remain contingent upon cost-benefit analyses.

Descriptors: Indoor patient tracking systems; Information technologies; Health services management; Bluetooth low energy; Received signal strength indicator.

ORIGINAL STUDY

Early risk calculation app for bariatric surgery: Development and applicability

Aplicativo de cálculo de risco precoce para cirurgias bariátricas: Desenvolvimento e aplicabilidade

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ABSTRACT

Introduction: Bariatric surgery is an alternative for severe obesity treatment refractory to clinical therapy, although it presents pre and post-operative risks and complications. In an attempt to minimize morbimortality, scores were developed to associate larger risks to previous clinical parameters in patients. **Objective:** To develop a prototype of an app that calculates the risk a patient has in developing the most frequent complications during post-op of bariatric surgery, in addition to evaluate its applicability in the market among bariatric surgeons. **Methods:** Bibliographic research was made using data bases about complications prevalence after bariatric surgery and its risks factors, including validated formulas that calculate risks of complications based on patients individual parameters. Another step of the project consisted in market research, performed by surveys administered to bariatric surgeons in Minas Gerais. **Results:** The first survey was important to obtain a panorama on surgeons expectations regarding the app. In that survey, surgeons could also give opinion about existing apps' flaws and pricing as well. They also ranked criteria relevance like agility while using it, data reliability, propositional and informative character in developing a new app. The second survey presented feedback from surgeons about the prototype. Until this moment, 71% showed high chances of using and recommending to colleagues. **Conclusion:** The project offers an innovation perspective in bariatric surgery scenario, by developing an intuitive app on surgical risk stratification, which aims to meet surgeons demands and effectively participate in their routine. It is destined to predict post-op complications and help professionals in decision making, providing more safety to either doctor and patient.

Keywords: "Bariatric surgery"; "Mobile applications"; "Postoperative complications".

ORIGINAL STUDY

Learning optimization in orotracheal intubation class on a simulation manikin using a low cost videolaryngoscope for training

Otimização do aprendizado em aula de intubação orotraqueal em manequim de simulação com a utilização de videolaringoscópio de baixo custo para treinamento

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ABSTRACT

Introduction: The orotracheal intubation (OTI) procedure may lead to complications, especially in emergency situations that require the rapid sequence method. There are some important factors that must be evaluated before performing the intubation technique and are predictors of difficult airways, such as a high Mallampati scale. However, the mastery of the technique is one of the biggest predictors of a good outcome, being able to reduce complications. Therefore, it is important to improve the learning of this practice in the graduation period. Many studies related to videolaryngoscopy have been published, but this method is still restricted to medical specialties, with little access by students. The introduction of the video laryngoscope for medical students would enable a better understanding of the technique, the anatomic structures and the positioning of the devices. **Objective:** To evaluate the effectiveness of a low-cost device that will assist medical students in learning the direct laryngoscopy technique for orotracheal intubation through videolaryngoscopy. **Methods:** This is a quasi-experimental cross-over study, in which the first stage comprised the manufacture of a low-cost videolaryngoscope for training. Then, the knowledge of the research subjects (students from the 7th to the 9th period of medicine) was leveled through an online theoretical class on airway management. The second part will be the realization of practical classes in simulation mannequins, from 11/08/23 to 06/10/23, with the subsequent data collection. At this time a form will be applied to quantify the difficulty of students in performing the intubation technique with videolaryngoscope and with the common laryngoscope. **Results:** It will be possible to analyze whether there was an improvement in the airway visualization, a reduction in the number of attempts for successful intubation and the time taken for the correct performance of the OTI procedure by the students.

Keywords: Intratracheal; Rapid Sequence Induction and Intubation; Simulation Training.

Financial support: This study is supported by the Program of Scientific Initiation Scholarships Dedicated to Innovation of the Faculdade de Ciências Médicas de Minas Gerais (PROBIC-INOVA/FCMMG).

ORIGINAL STUDY

Evaluation of postoperative pain in patients of a university hospital undergoing laparoscopic cholecystectomy using local anesthesia before and after portal incision

Avaliação da dor no pós-operatório de pacientes de um hospital universitário submetidos a colecistectomia videolaparoscópica utilizando anestesia local antes e depois da incisão portal

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ABSTRACT

Introduction: According to DATASUS, about 300,000 laparoscopic cholecystectomies (LC) are performed annually, being an important procedure within Brazilian public health. LC is a minimally invasive procedure, which removes the diseased gallbladder, performed under general anesthesia, treating the acute abdominal pain. In the immediate postoperative, some authors reiterate that intra-abdominal and incisional pain is the most common complaints among patients. **Objectives:** To evaluate postoperative pain differences in patients undergoing LC with local anesthesia before and after portal incision. **Methods:** This was a double-blind randomized clinical trial approved by an ethical commission linked to Faculdade de Ciências Médicas de Minas Gerais that goes by CAAE 62719322.4.0000.5134. It was developed with 30 patients divided in 2 groups of 15 patients each. In the first group (Group 1) local anesthesia was given before the portals were incised. In the second group (Group 2), local anesthesia was given after the incision, before suturing. Finally, a questionnaire adapted from the Visual Analogue Scale (VAS) pain questionnaire was applied in the 1 hour postoperative to assess whether there was a difference between the groups. **Results:** Results show that 12 patients (40%) classified their pain as level 1, and 18 (60%) classified their pain as level 0. Comparing the groups, Group 1 had 4 patients with level 1, while Group 2 had 8 patients, representing a difference of 100% between them. As for level 0, Group 1 had 11 patients with it, while Group 2 had 7 patients, representing a difference of 36% between them. **Conclusion:** This results could suggest that there is a benefit regards pain sensation, when using anesthesia before portals incision, however it isn't a statistical difference, presenting a p value of 0,14, so it can't be established an association between the levels of pain presented and the moment (before and after), being necessary further evaluation.

Descriptors: Cholecystectomy; Pain Measurement; Local Anesthesia.

Financial support: Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG)

ORIGINAL STUDY

Evaluation of the overload of caregivers of children and adolescents with functional diversities and its relationship with functional impairment and dependence: A cross-sectional study

Avaliação da sobrecarga do cuidador de crianças e adolescentes com diversidades funcionais e sua relação com o comprometimento funcional e dependência: Um estudo transversal

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ABSTRACT

Introduction: providing care for individuals with functional diversity, whether stemming from physical, visual, auditory, intellectual, psychosocial, or multiple challenges, necessitates the caregiver to adapt, often resulting in considerable physical, emotional, and financial burdens. Recognizing these burdens as crucial and acknowledging their impact on the development of children and adolescents with disabilities underscore the need to explore relevant factors. **Objective:** to analyze how variables such as the functional abilities of the disabled individual, caregiver support and environmental adjustments are capable of collectively influencing the caregiver's journey. **Methods:** conducted as a quantitative and descriptive cross-sectional observational study, the project was submitted and approved by the ethics and research committee, with the respective approval number CAAE: 64566922.7.0000.5134 This study engaged caregivers of children and adolescents affiliated with health care services offered by FCMMG. These participants responded to the "Zarit Caregiver Burden Interview," the "Pediatric Evaluation of Disability Inventory (PEDI)," and a 2022 economic classification criterion. **Results:** initial analysis encompassed 73 participants. The caregiver-sample relationship was characterized, revealing that among respondents, 64% were mothers, 25% fathers, 5% grandparents, and 5% professional caregivers. Predominant functional diversities included autism spectrum disorder (ASD), followed by Cerebral Palsy and Trisomy 21. Additional diagnoses encompassed attention deficit hyperactivity disorder (ADHD), Epilepsy, and Sensory and/or Motor Disabilities. Overlapping conditions within the same child were observed. Evaluating burden using the Zarit scale unveiled 78% experiencing "severe" burden, 12.3% "moderate," and 9.5% "mild." Socioeconomic classification showed 13.6% class A, 6.8% B1, 20.5% B2, 32.8% C1, and 26% C2. Data analysis from the PEDI questionnaire is ongoing. **Conclusion:** while further exploration is necessary to fulfill our study's objectives, the current findings underscore that caring for individuals with functional diversity significantly burdens many caregivers.

Keywords: Disabled Persons. Caregivers. Caregiver Burden. Child. Adolescent.

Financial support: Faculdade de Ciências Médicas de Minas Gerais.

ORIGINAL STUDY

Outcome of the treatment of premalignant and malignant lesions at a surgical clinic between 2019 and 2021

Resultado do tratamento de lesões pré-malignas e malignas em um ambulatório de clínica cirúrgica entre 2019 e 2021

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ABSTRACT

Introduction: The number of outpatient surgery procedures is increasing due to medical advances. Among the most performed are removing lesions for histopathological analysis, with the diagnosis of premalignant and malignant lesions being significantly prevalent and lack of follow-up care is being seen. However, only a few studies address this issue in educational institutions. **Objective:** The main aim of this research is to identify pre-malignant and malignant skin lesions and analyze the conduct and evolution of these cases, comparing data referring to the period before and after the start of the pandemic by COVID-19 due to SARS-CoV-2. **Methods:** A cross-sectional analysis will be carried out of patients treated at a Surgical Clinic and in the joint efforts of an Academic Surgery League surgery between August and December of 2019 and between August and December 2021, for later comparison of the data obtained. **Results:** A decrease in the search for care is expected due to the risk of contagion, especially among members of risk. Another hypothesis is that there may be an increase in demand for surgeries after the end of the pandemic due to the long period of stoppage. Furthermore, there may be a change in the prevalence of each type of injury, depending on its prolonged evolution time. **Conclusion:** So far data analysis has shown that most procedures are excisions of epidermal cysts, lipomas and pre-malignant and malignant lesions. In addition, there is a significant number of malignant lesions removed without adequate treatment due to lack of follow-up care at the time of the pandemic.

Descriptors: Ambulatory Surgical Procedures; Skin Neoplasms; Pandemics; COVID-19; SARS-CoV-2.

Financial support: PIBIC/FAPEMIG, supported by Faculdade de Ciências Médicas de Minas Gerais.