

# Women and Children's Current Awareness Bulletin

July 2021

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**Title: Orthopaedic consultant surgeons perceptions of an advanced practice physiotherapy service in paediatrics: A qualitative study.**

**Citation:** Musculoskeletal Care; Jun 2021; vol. 19 (no. 2); p. 149-157

**Author(s):** O Mir ; Blake, Catherine; Cunningham, Caitriona; Fennelly, Orna; O'Sullivan, Cliona

**Objectives:** The objective of this study is to determine orthopaedic consultants' perceptions of an advanced practice physiotherapy (APP) service in paediatrics.

**Design:** This is a qualitative study that use semi-structured interviews to explore consultant doctors' experiences of an APP paediatric orthopaedic service and its development. Data were transcribed verbatim and subsequently underwent thematic analysis.

**Participants:** Five orthopaedic consultants in two hospital settings participated, and all of whom had experience of working with paediatric orthopaedic APPs.

**Results:** Seven themes were derived from the analysis, with all participants in the study identifying factors affecting the development of the service and demonstrating broad support for the APP role, with benefits noted as including improved efficiency of service, expansion of skill mix within the team, positive impressions of the standard of care and improved education and liaison with the families and community practitioners at large.

**Conclusions:** This paper highlights many of the factors that should be considered when introducing an APP service in an outpatient setting. This study demonstrates consistent cross-site positive regard in the skill and competency of the APP in paediatric orthopaedics, to enhance orthopaedic services for children.

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**Title: Changes in Pediatric Sports Injury Presentation During the COVID-19 Pandemic.**

**Citation:** Orthopaedic Journal of Sports Medicine; Apr 2021; vol. 9 (no. 4); p. 1-6

**Author(s):** Johnson ; Halloran, Kenny; Carpenter, Connor; Pascual-Leone, Nicolas; Parambath, Andrew; Sharma, Jigyasa; Seltzer, Ryan; Ellis, Henry B.; Shea, Kevin G.; Ganley, Theodore J.

**Background:** The current coronavirus 2019 (COVID-19) pandemic has prompted a multitude of public health response measures including social distancing, school cancellations, and cessation of organized sports.

**Purpose:** To examine the impact of COVID-19 and corresponding public health measures on the characteristics of common pediatric musculoskeletal injuries associated with sports.

**Study Design:** Cohort study; Level of evidence, 3.

**Methods:** This was a multicenter retrospective cohort study comparing patients with sports injuries presenting to 3 geographically diverse level I pediatric trauma hospitals and outpatient orthopaedic surgery clinics in the United States during the COVID-19 pandemic and a pre-pandemic period at the same institutions. Patients were included if they presented for care between February 15 and July 15 in 2020 (pandemic cohort) or between March 15 and April 15 in 2018 and 2019 (pre-pandemic cohort).

**Results:** Included were 1455 patients with an average age of  $12.1 \pm 4.5$  years. When comparing patients presenting in 2018 and 2019 with those presenting in 2020, we observed a decrease in mean age during the pandemic ( $12.6 \pm 4.0$  vs  $11.0 \pm 5.2$  years;  $P = .048$ ). Additionally, a decrease in the proportion of injuries attributed to sports (48.8% vs 33.3%;  $P < .001$ ) and those occurring at school (11.9% vs 4.0%;  $P = .001$ ) was observed. The

proportion of injuries attributable to clavicle fractures increased during the early stages of the pandemic (13.2% vs 34.7%;  $P < .001$ ). There was no statistically significant delay to care in injuries presenting during the pandemic ( $41.5 \pm 141.2$  vs  $19.23 \pm 79.1$  days;  $P = .175$ ).

**Conclusion:** Across 3 tertiary care institutions, patients were seen without significant delay during the pandemic. We observed a significant decline in pediatric musculoskeletal injuries associated with sports during the COVID-19 pandemic. This decrease has been accompanied by a shift in both injury type and mechanism.

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**Title: Modern management of paediatric tibial shaft fractures: an evidence-based update.**

**Citation:** European Journal of Orthopaedic Surgery & Traumatology; Jul 2021; vol. 31 (no. 5); p. 901-909

**Author(s):** Murphy ; Raza, Mohsen; Monsell, Fergal; Gelfer, Yael

**Aims:** This review provides a summary of recent evidence surrounding the treatment of paediatric tibial shaft fractures and presents an algorithm to aid management of these injuries.

**Summary:** This article reviews the relevant anatomy, epidemiology and aetiology of tibial shaft fractures and summarises contemporary treatment principles. Management recommendations and supporting evidence are given for fractures according to age (< 18 months, 18 months–5 years, 6–12 years, and 13–18 years). The relative merits of casting, plate fixation, elastic and rigid intramedullary nailing, and external fixation are discussed. Special attention is paid to the management of open tibial shaft fractures and to complications including infection and acute compartment syndrome.

**Conclusions:** There has been a shift away from non-operative management of paediatric tibial shaft fractures over the last 30 years. However, recent evidence highlights that a non-operative approach produces acceptable outcomes when used in simple closed fractures at any age. Operative management may be indicated for unstable fractures where satisfactory alignment cannot be maintained or in specific circumstances including open injuries and polytrauma. Open injuries require urgent assessment by a combined orthopaedic and plastic surgery team at a specialist tertiary centre.

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**Title: Postoperative Outcomes in Diabetic Pediatric Orthopaedic Surgery Patients: A National Database Study.**

**Citation:** Journal of pediatric orthopedics; Jun 2021

**Author(s):** Farahani, Farzam; Ahn, Junho; Nakonezny, Paul A; Wukich, Dane K; Wimberly, Robert L; Riccio, Anthony I

**Background:** Although the negative effects of diabetes mellitus (DM) on operative outcomes in orthopaedic surgery is a well-studied topic in adults, little is known about the impact of this disease in children undergoing orthopaedic procedures. This study aims to describe the postoperative complications in pediatric orthopaedic surgery patients with DM.

**Methods:** Pediatric patients with insulin-dependent diabetes mellitus (IDDM) and non-insulin-dependent diabetes mellitus (NIDDM) were retrospectively identified while selecting for elective orthopaedic surgery cases from the American College of Surgeons National Surgical Quality Improvement Program Pediatric (ACS-NSQIP-Pediatric) database from

2012 to 2015. Univariate and multivariate analyses were performed to describe and assess outcomes when compared with nondiabetic patients undergoing similar procedures.

**Results:** Of the 17,647 patients identified, 105 (0.60%) had DM. Of those 105 patients, 68 had IDDM and 37 had NIDDM. The median age of DM patients was 13.8 years (11.9 to 15.5 y) and 37.1% of all DM patients were male. Comparing DM to non-DM patients, no significant differences were noted in the overall complications (1.4% vs. 1.9%,  $P>0.05$ ) or reoperation rates (1.2% vs. 1.9%,  $P>0.05$ ); however, DM patients did have a higher occurrence of unplanned readmissions (4.8% vs. 1.7%;  $P=0.037$ ). Diabetic patients were statistically more likely to have an unplanned readmission with 30 days (adjusted odds ratio=3.34; 95% confidence interval=1.21-9.24,  $P=0.021$ ). when comparing IDDM to NIDDM, there was no significant difference in outcomes. Comparing NIDDM to non-DM patients, there was an increased incidence of nerve injury (5.6% vs. 0.18%;  $P=0.023$ ), readmission rate (11.1% vs. 1.8%;  $P=0.043$ ), and reoperation rate (11.1% vs. 1%;  $P=0.013$ ) in nonspinal procedures and an increased incidence of pulmonary embolism (10% vs. 0%;  $P=0.002$ ) in spinal arthrodesis procedures. NIDDM predicted longer hospital stays (adjusted odds ratio=1.49; 95% confidence interval=1.04, 2.14;  $P=0.028$ ) compared with nondiabetic patients in extremity deformity procedures.

**Conclusions:** The 30-day complication, reoperation, and readmission rates for NIDDM patients were higher than that of non-DM patients. Furthermore, NIDDM is a predictor of longer hospital stays while DM is a predictor of unplanned readmissions. No statistical differences were noted when comparing outcomes of NIDDM to IDDM patients.

**Level Of Evidence:** Level III.

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**Title:** Readability of Patient Educational Materials in Pediatric Orthopaedics.

**Citation:** The Journal of bone and joint surgery. American volume; Jun 2021; vol. 103 (no. 12); p. e47

**Author(s):** Ó Doinn, Tiarnán; Broderick, James M; Abdelhalim, Muthana M; Quinlan, John F

**Background:** Parents are increasingly turning to the internet to seek pediatric health information. Numerous organizations advise that patient educational materials (PEMs) should not surpass the sixth-grade reading level. We aimed to assess the readability of online pediatric orthopaedic PEMs.

**Methods:** The readability of 176 articles pertaining to pediatric orthopaedics from the American Academy of Orthopaedic Surgeons (AAOS), Pediatric Orthopaedic Society of North America (POSNA), and American Academy of Pediatrics (AAP) websites was assessed with the use of 8 readability formulae: the Flesch-Kincaid Reading Grade Level, the Flesch Reading Ease Score, the Raygor Estimate, the SMOG, the Coleman-Liau, the Fry, the FORCAST, and the Gunning Fog. The mean reading grade level (RGL) of each article was compared with the sixth and eighth-grade reading levels. The mean RGL of each website's articles also was compared.

**Results:** The cumulative mean RGL was 10.2 (range, 6.6 to 16.0). No articles (0%) were written at the sixth-grade reading level, and only 7 articles (4.0%) were written at or below the eighth-grade reading level. The mean RGL was significantly higher than the sixth-grade (95% confidence interval [CI] for the difference, 4.0 to 4.4;  $p < 0.001$ ) and eighth-grade (95% CI, 2.0 to 2.4;  $p < 0.001$ ) reading levels. The mean RGL of articles on the POSNA website was significantly lower than the mean RGL of the articles on the AAOS (95% CI, -1.8 to -1.0;  $p < 0.001$ ) and AAP (95% CI, -2.9 to -1.1;  $p < 0.001$ ) websites.

**Conclusions:** Pediatric orthopaedic PEMs that are produced by the AAOS, the POSNA, and the AAP have readability scores that exceed recommendations. Given the increasing preference of parents and adolescents for online health information, the growing body of

online PEMs, and the critical role that health literacy plays in patient outcomes, substantial work is required to address the readability of these materials.

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**Title: What Can We Learn From COVID-19 Protocols With Regard to Management of Nonoperative Pediatric Orthopaedic Injuries?**

**Citation:** Journal of pediatric orthopedics; Jun 2021

**Author(s):** Hancock, Graeme E; Baxter, Ian; Balachandar, Vivek; Flowers, Mark J; Evans, Owain G

**Introduction:** The COVID-19 pandemic has resulted in significant changes to normal practice in pediatric outpatient orthopaedics, with the instigation of telephone fracture clinic appointments, and the use of self-removable casting. We aim to determine any beneficial or detrimental short-term effects of these changes.

**Methods:** All patients referred to fracture clinic from the emergency department during the period March 24, 2020 to May 10, 2020 (national lockdown) were assessed for number of face to face and telephone appointments, number of radiographs performed, time to discharge, use of a removable cast, any cast complications, other complications, reattendance or re-referral after discharge. They were compared with patients referred in the same period in 2019. Follow-up was to 6 months for every patient.

**Results:** In 2019, 240 patients were reviewed and 110 in 2020. Changes in practice resulted in significant differences in the number of face to face appointments per patient [2 (1 to 6) 2019 vs. 1 (0 to 5) 2020 ( $P < 0.00001$ )] and increase in telephone appointments [0 (0 to 1) 2019 vs. 1 (0 to 2) 2020]. Number of radiographs per patient [1 (1 to 7) 2019 vs. 1 (1 to ) 2020 ( $P = 0.0178$ )] and time to discharge [29 d (0 to 483) 2019 vs. 16 d (0 to 216) 2020 ( $P < 0.00001$ )] also reduced significantly. Use of a self-removable casting technique increased significantly (2.4% of casts in 2019 vs. 91.8% in 2020 (£185 000 per annum could be demonstrated through clinic appointment and cast removal reductions).

**Discussion:** Changes to the normal management of pediatric orthopaedic trauma brought about by the COVID-19 pandemic have been demonstrated to be safe in the short term with no increase in complications demonstrated. Potential cost savings are possible both to the health care provider and also to the patient because of reduced hospital attendance. It is feasible to continue these practices for the potential benefits as they appear safe in the short term.

**Level Of Evidence:** Level III-therapeutic study-retrospective comparative study.

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**Title: A Foot to Last a Lifetime-Is Hindfoot Fusion Ever Appropriate for Pediatric Orthopaedic Conditions?**

**Citation:** Journal of pediatric orthopedics; Jul 2021; vol. 41 ; p. S39

**Author(s):** Kelly, Derek M

**Introduction:** Hindfoot deformities in the pediatric population can be painful and result in severe limitations. Although arthrodesis is known to relieve pain, there are concerns over its use because of the risk that adjacent joint degenerative disease could result, leading to a new source of pain, dysfunction, and additional surgical procedures later in life.

**Methods:** A literature review of hindfoot fusions in children focused on articles with the highest levels of evidence and those of particular historical significance. Case examples were obtained by querying the billing records of the local clinic system for Current

Procedural Terminology (CPT) codes of hindfoot arthrodeses. Surgery procedures were performed by both fellowship-trained pediatric orthopaedists and fellowship-trained foot and ankle orthopaedic surgeons.

**Results:** The medical literature for this topic generally is divided into 2 main types of articles: those that describe hindfoot fusion procedures for a specific type of deformity or disease process and those that provide the indications and results of a single type of arthrodesis. Long-term follow-up studies are limited.

**Discussion:** The long-term risk of degeneration to adjacent joints has been studied, with mixed results. Other problems, such as recurrent deformity, overcorrection, pseudarthrosis, osteonecrosis, and foot shortening also may be encountered over intermediate-term follow-up. Nevertheless, in properly chosen patients, hindfoot fusion can offer a great improvement over the damaging and destructive deformities of the feet caused by a variety of diseases and traumatic injuries. Hindfoot fusions have been used for the treatment of foot deformities secondary to severe trauma, hemophilia, tarsal coalition, clubfoot, and neurological disease such as polio, static encephalopathy, hereditary motor and sensory neuropathies, and myelodysplasia.

**Conclusions:** Hindfoot fusion in a child or adolescent should be considered only for the most extreme cases when all other options, short of amputation, have been considered or exhausted. While these procedures can offer improvement in the challenging cases, the surgeon should be aware of their long-term implications, including adjacent joint degeneration.

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**Title: What is New in Pediatric Bone Health.**

**Citation:** Journal of pediatric orthopedics; Jul 2021

**Author(s):** Beck, Jennifer J; Mahan, Susan T; Nowicki, Philip; Schreiber, Verena M; Minkowitz, Barbara

**Background:** This review paper aims to report on the last 5 years of relevant research on pediatric bone health in regard to nutrition and obesity, ethnic disparities, common orthopaedic conditions, trauma, spine, and sports medicine.

**Methods:** A search of the PubMed database was completed using the following terms: bone health, Vitamin D, pediatric, adolescent, sports medicine, fractures, spine, scoliosis, race, ethnicity, obesity, Slipped Capital Femoral Epiphysis, Osteogenesis Imperfecta, Duchenne's Muscular Dystrophy, neuromuscular, and cancer. Resultant papers were reviewed by study authors and determined to be of quality and relevance for description in this review. Papers from January 1, 2015 to August 31, 2020 were included.

**Results:** A total of 85 papers were selected for review. General results include 7 key findings. (1) Obesity inhibits pediatric bone health with leptin playing a major role in the process. (2) Socioeconomic and demographic disparities have shown to have a direct influence on bone health. (3) Vitamin D deficiency has been linked to an increased fracture risk and severity in children. (4) Formal vitamin D monitoring can aid with patient compliance with treatment. (5) Patients with chronic medical conditions are impacted by low vitamin D and need ongoing monitoring of their bone health to decrease their fracture risk. (6) Vitamin D deficiency in pediatrics has been correlated to low back pain, spondylolysis, and adolescent idiopathic scoliosis. Osteopenic patients with AIS have an increased risk of curve progression requiring surgery. Before spine fusion, preoperative screening for vitamin D deficiency may reduce complications of fractures, insufficient tissue repair, loosening hardware, and postoperative back pain. (7) Increasing youth sports participation has resulted in increased bone health related injuries. However, improved understanding of Relative Energy Deficiency in Sport effects on bone health has recently occurred.

**Conclusions:** Increasing awareness of bone health issues in children will improve their recognition and treatment. Further research is needed on diagnosis, treatment, outcomes, and most importantly prevention of pediatric bone health diseases.

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**Title: Pediatric Venous Thromboembolism: Different Rates of Incidence, Anatomic Locations, and Risk Factors Between Orthopaedic and Nonorthopaedic Related Patients.**

**Citation:** Journal of pediatric orthopedics; Jul 2021; vol. 41 (no. 6); p. 379-384

**Author(s):** Samineni, Aneesh V; Sanborn, Ryan; Shea, Jodie; Cook, Danielle; May, Collin J; Heyworth, Benton E; Shore, Benjamin J

**Background:** The prevalence of venous thromboembolism (VTE) may be increasing in children; however, scarce literature exists comparing incidence rates between pediatric orthopaedic patients and other pediatric patients. The purpose of this study was to compare the incidence, anatomic locations, and risk factors of VTEs between orthopaedic and nonorthopaedic pediatric related patients to determine if important differences exist.

**Methods:** Computed tomography and ultrasound data were reviewed for children (below 19 y old) with a diagnosed VTE between January 1, 2009 and December 31, 2016. Demographic and clinical data, including VTE anatomic location and risk factors, were recorded. Two major cohorts were identified: orthopaedic-related (ORTH) and nonorthopaedic-related (NORTH) VTEs. Incidence rates were estimated and risk factors were compared using  $\chi^2$  testing.

**Results:** There were 373 children diagnosed with a VTE (average age 10.3 y) of a total of 810,097 treated as in-patients for an incidence rate of 4.60 per 10,000 cases (95% confidence interval=4.15 to 5.10 per 10,000 cases). The rate of ORTH VTEs (28 of 188,669 orthopaedic patients, 1.48 per 10,000 cases) was significantly lower than that of NORTH VTEs (345 of 621,428 nonorthopaedic patients, 5.55 per 10,000 cases;  $P<0.001$ ). For the ORTH cohort, there was a significant difference in the proportion of deep vein thrombosis in the lower extremity (91%) compared with the upper extremity (9%) ( $P<0.001$ ), while a more even distribution of NORTH deep vein thrombosis in the upper (50%) and lower (41%) extremities was appreciated. The primary risk factors for ORTH VTEs included surgery (93%;  $P<0.001$ ), change in ambulatory status (61%;  $P<0.001$ ), and trauma (18%;  $P<0.001$ ), while the primary risk factors for NORTH VTEs included intravenous peripheral inserted central catheter/central line (61%;  $P<0.001$ ) and cancer (27%;  $P=0.001$ ).

**Conclusions:** Pediatric ORTH VTEs have a significantly lower incidence rate and different primary risk factors than those of NORTH VTEs. This information is useful for health care providers when making decisions regarding risk and prophylaxis in pediatric patients with orthopaedic and nonorthopaedic conditions.

**Level Of Evidence:** Level III.

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**Title: Preoperative Considerations for Teenagers Undergoing Orthopaedic Surgery: VTE Prevention, Mental Health Assessment, Vaping, and Drug Addiction.**

**Citation:** Journal of pediatric orthopedics; Jul 2021; vol. 41 ; p. S64

**Author(s):** Shore, Benjamin J; Flaugh, Rachel; Shannon, Brett A; Curran, Patrick; Hogue, Grant

**Introduction:** Adolescents undergoing pediatric orthopaedic surgery typically experience an uncomplicated postoperative course. However, adolescence represents a unique transition period from pediatric to adult physiology. As a result, the astute pediatric orthopaedic surgeon will be aware of unique medical and social scenarios which are relevant to adolescents during the perioperative course including the risk of venous thromboembolism (VTE), prevalence of mental health conditions, and rising use of electronic cigarettes or "vaping" to consume nicotine and cannabis.

**Discussion:** Adolescents are at a greater risk of VTE after pediatric orthopaedic surgery. In particular, adolescent females with a family history of blood clotting disorders and those with a change in mobility after surgery should be considered for prophylaxis. The prevalence of adolescent mental health conditions including anxiety, depression, and behavioral issues is increasing in the United States. Higher levels of preoperative anxiety and the presence of mental health pathology are associated with slower recovery, higher levels of postoperative pain, and the increased likelihood for chronic pain. Several quick screening instruments are available to assess adolescents for preoperative anxiety risk, including the Visual Analogue Scale for Anxiety or the Amsterdam Perioperative Anxiety Information Scale. Unfortunately, electronic cigarettes have become increasingly popular for the consumption of nicotine and cannabis among adolescents. Preoperative use of combustible cigarettes (nicotine/cannabis) represents perioperative risks for induction/anesthesia, postoperative pain, and analgesia requirements and issues with delayed wound and fracture healing.

**Conclusions:** VTE, underlying mental health conditions, and usage of nicotine and cannabis are clear detractors to the recovery and healing of adolescent patients following orthopaedic surgery. Therefore, standardized screening for adolescents before orthopaedic surgery is indicated to identify perioperative risk factors which have negative impacts on functional outcomes.

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**Title: Use of Telemedicine in Pediatric Orthopaedics Prior to the Pandemic: A Survey of POSNA Members.**

**Citation:** Journal of pediatric orthopedics; Jul 2021; vol. 41 (no. 6); p. e475

**Author(s):** Hosseinzadeh, Pooya; Meyer, Zachary; Vanderhave, Kelly; Lovejoy, John

**Background:** Telemedicine, or telehealth, is broadly defined as the use of technology to deliver health care or health education at distance. Synchronous communication telemedicine, which involves the use of real time audio and video between patient and provider, is a developing field and its use in the pediatric orthopaedic population is not well defined. To better understand the existing use of and challenges posed by telemedicine for pediatric orthopaedic providers, the Pediatric Orthopaedic Society of North America (POSNA) practice management committee conducted a survey of current POSNA members.

**Methods:** A 33-question survey was created by the POSNA Practice Management Committee, piloted among committee members and approved by the POSNA Evidence Based Practice Committee. A total of 167 responses were complete (75% complete response rate). Telemedicine use questions referred to the use of synchronous communication telemedicine.

**Results:** A total of 50% reported being "moderately" or "not really" familiar with telemedicine. Sixty percent of study participants reported their hospital systems utilize telemedicine; however, only 40% reported utilizing telemedicine in their own practice. Sixty-seven percent indicated interest in telemedicine training. Telemedicine was utilized for a variety of patient pathology and visit types 57% of study participants did not bill for telemedicine services. Sixty-three percent were unaware of their states' billing rules regarding telemedicine.



**Conclusion:** The survey is an attempt to understand the current landscape of telemedicine use within pediatric orthopaedics. Currently, a minority of survey participants utilize synchronous communication telemedicine. There is a desire for telemedicine training and best billing practices education. Further study to evaluate the limitations and efficacy of telemedicine in the pediatric orthopaedic population will be necessary as its use increases.

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**Title: Reliability and sensitivity of radiographic measures of hip dysplasia in childhood Charcot-Marie-Tooth disease.**

**Citation:** Hip international : the journal of clinical and experimental research on hip pathology and therapy; Jun 2021 ; p. 11207000211027591

**Author(s):** Dwan, Leanne N; Gibbons, Paul; Jamil, Kamal; Little, David; Birke, Oliver; Menezes, Manoj P; Burns, Joshua

**Background:** Hip dysplasia is a lack of femoral head coverage and disruption of hip and acetabular alignment and congruency, with severity ranging from mild subluxation in nascent at-risk hips to complete dislocation. Presentation of hip dysplasia in neuromuscular conditions can be sub-clinical or associated with a limp with or without hip pain, abductor and flexor weakness and reduced hip range of motion. Untreated hip dysplasia leads to early onset osteoarthritis requiring hip arthroplasty in early adulthood. Hip dysplasia occurs in 6-20% of children with Charcot-Marie-Tooth disease, however little is known about the reliability and sensitivity of detection on plain film pelvic radiographs.

**Methods:** 14 common measures of hip dysplasia on anteroposterior pelvis radiographs were independently assessed by 2 orthopaedic specialists in 30 ambulant children with Charcot-Marie-Tooth disease. Hip health was also categorised based on clinical impression to assess the sensitivity of radiographic measures to identify hip dysplasia status.

**Results:** 8 measures (acetabular index, head width, lateral centre-edge angle, lateral uncoverage, medial joint width, migration percentage, neck shaft angle, triradiate status) exhibited 'excellent' reliability between clinical evaluators. 5 of the 30 patients (17%) were identified as having nascent hip dysplasia. Reliable radiographic measures that significantly distinguished between nascent hip dysplasia and healthy hips were acetabular index, lateral centre edge angle, medial joint width and migration percentage.

**Conclusions:** We have identified a subset of reliable and sensitive radiographic hip measures in children with Charcot-Marie-Tooth disease to prioritise during hip screening to mitigate the deleterious effects of hip dysplasia, pain and disability in adulthood.

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**Title: Caregivers of children with autism spectrum disorder in rural areas: A literature review of mental health and social support.**

**Citation:** Journal of pediatric nursing; Jun 2021; vol. 61 ; p. 229-239

**Author(s):** Ault, Samantha; Breitenstein, Susan M; Tucker, Sharon; Haverkamp, Susan M; Ford, Jodi L

**Problem:** Caregivers of children with Autism Spectrum Disorder (ASD) report high levels of stress, social isolation, and poor mental health. Social and emotional support may buffer negative effects of stress for caregivers of children with ASD, however, those living in rural areas may be disadvantaged due to social isolation and increased distance from resources. This scoping review examined the literature regarding the mental health and impact of support for rural caregivers of children with ASD.

**Eligibility Criteria:** Articles were limited to those available in the English language and conducted in a high income country. Articles had to include a population of rural caregivers of children with ASD and focus on caregiver mental health and/or the impact of support on caregiver mental health.

**Sample:** Searches were conducted with Embase, PubMed, CINAHL, ERIC, and PsycINFO and 22 articles were included.

**Results:** Study findings indicate overall poor mental health for rural caregivers of children with ASD. Formal and informal support appear to be beneficial in decreasing stress for rural caregivers of children with ASD. However, a few studies indicated that formal support may add stress to rural caregivers.

**Conclusion:** There is limited information regarding support needs and the impact of support services on the mental health of rural caregivers of children with ASD.

**Implications:** There is a need to increase access to support resources in rural areas for caregivers of children with ASD. Healthcare professionals, including nurses, can play a fundamental role in supporting, educating, and connecting caregivers to other support services.

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**Title: Pediatric oncology clinician communication about sexual health with adolescents and young adults: A report from the children's oncology group.**

**Citation:** Cancer medicine; Jun 2021

**Author(s):** Frederick, Natasha N; Bingen, Kristin; Bober, Sharon L; Cherven, Brooke; Xu, Xinxin; Quinn, Gwendolyn P; Ji, Lingyun; Freyer, David R

**Background:** Sexual health (SH) is an important concern for adolescents and young adults (AYAs). This study determined current SH communication practices, barriers, and additional resources needed among pediatric oncology clinicians who treat AYAs.

**Methods:** A cross-sectional survey was developed by the Children's Oncology Group (COG) AYA Committee and sent to pediatric oncologists (n = 1,987; 85.9%) and advanced practice providers (APPs, n = 326; 14.1%) at 226 COG institutions. Responses were tabulated and compared using tests of proportion and trend.

**Results:** The sample comprised 602 respondents from 168 institutions and was proportionally representative (468 oncologists [77.7%], 76 APPs [12.6%], 58 unidentified [9.6%]; institutional and provider response rates 74.3% and 26.2%, respectively). Almost half of respondents (41.7%) reported no/small role in SH care. Medical topics were discussed most often, including contraception (67.2%), puberty (43.5%), and sexual activity (37.5%). Topics never/rarely discussed included gender identity (64.5%), sexual orientation (53.7%), and sexual function (50.3%). Frequently cited communication barriers included lack of time, low priority, perceived patient discomfort, and the presence of a parent/guardian. Respondents endorsed the need for further education/resources on sexual function (66.1%), gender identity/sexual orientation (59.5%), and body image (46.6%). Preferred education modalities included dissemination of published guidelines (64.7%), skills training modules (62.9%), and webinars (45.3%). By provider type, responses were similar overall but differed for perception of role, barriers identified, and resources desired.

**Conclusions:** Many pediatric oncology clinicians play minimal roles in SH care of AYAs and most SH topics are rarely discussed. Provider-directed education/training interventions have potential for improving SH care of AYA cancer patients.

**Title: Preventing postnatal depression: a causal mediation analysis of a 20-year preconception cohort.**

**Citation:** Philosophical transactions of the Royal Society of London. Series B, Biological sciences; Jun 2021; vol. 376 (no. 1827); p. 20200028

**Author(s):** Spry, Elizabeth A; Moreno-Betancur, Margarita; Middleton, Melissa; Howard, Louise M; Brown, Stephanie J; Molyneaux, Emma; Greenwood, Christopher J; Letcher, Primrose; Macdonald, Jacqui A; Thomson, Kimberly C; Biden, Ebony J; Olsson, Craig A; Patton, George C

**Abstract:** Postnatal depression (PND) is common and predicts a range of adverse maternal and offspring outcomes. PND rates are highest among women with persistent mental health problems before pregnancy, and antenatal healthcare provides ideal opportunity to intervene. We examined antenatal perceived social support as a potential intervention target in preventing PND symptoms among women with prior mental health problems. A total of 398 Australian women (600 pregnancies) were assessed repeatedly for mental health problems before pregnancy (ages 14-29 years, 1992-2006), and again during pregnancy, two months postpartum and one year postpartum (2006-2014). Causal mediation analysis found that intervention on perceived antenatal social support has the potential to reduce rates of PND symptoms by up to 3% (from 15 to 12%) in women with persistent preconception symptoms. Supplementary analyses found that the role of low antenatal social support was independent of concurrent antenatal depressive symptoms. Combined, these two factors mediated up to more than half of the association between preconception mental health problems and PND symptoms. Trialling dual interventions on antenatal depressive symptoms and perceived social support represents one promising strategy to prevent PND in women with persistent preconception symptoms. Interventions promoting mental health before pregnancy may yield an even greater reduction in PND symptoms by disrupting a developmental cascade of risks via these and other pathways. This article is part of the theme issue 'Multidisciplinary perspectives on social support and maternal-child health'.

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**Title: "The stakes could not be higher": A mixed methods study of parental social media use in pediatric oncology.**

**Citation:** Pediatric blood & cancer; Jun 2021 ; p. e29176

**Author(s):** Foot, Elizabeth; Leonhard, Amanda; Majeski, Jill; Zahn, Lauren; Li, Hsin H; Caruso Brown, Amy E

**Background:** To describe how parents and families of children with cancer evaluate the benefits and risks of using social media (SM) and how they navigate disagreements between oncologists' advice and information found on SM.

**Procedure:** Parents of children who had been previously diagnosed with cancer, and who had used SM for a purpose related to that child's health were recruited through SM sites and nonprofit organizations across the United States and were invited to complete questionnaires about their experiences using SM; a subset of participants also completed a follow-up in-depth interview. Open-ended responses and interviews were analyzed using thematic analysis.

**Results:** Ninety parents completed written questionnaires; 21 completed follow-up interviews. Seventy percent reported experiencing a situation in which information shared on SM conflicted with information provided by their child's oncologist. Although 86% reported

that they discussed the conflicting information with the oncologist and 70% described the oncologist's response as positive, 78% also described ongoing negative feelings about the experience. Parents described openness to discussing SM, honesty, transparency, and humility regarding the limits of medicine, and shared decision-making regarding information found on SM as increasing their trust in their oncologist.

**Conclusions:** Parents offered valuable insights regarding their experiences navigating SM, including eight recommendations for how pediatricians might approach discussing parental SM use. Future studies will evaluate the utility of these recommendations for pediatric clinicians.

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**Title: The Physical Health of Caregivers of Children With Life-Limiting Conditions: A Systematic Review.**

**Citation:** Pediatrics; Jun 2021

**Author(s):** Hartley, Julie; Bluebond-Langner, Myra; Candy, Bridget; Downie, Jonathan; Henderson, Ellen M

**Context:** Parental caregiving for a child with a life-limiting condition (LLC) is complex physical and mental work. The impact of this caregiving on parents' physical health is unknown.

**Objectives:** (1) To review existing evidence on the physical health of parents caring for a child with a LLC and (2) to determine how physical health of parents is measured.

**Data Sources:** Medline, Embase, PsycINFO, and Cumulative Index of Nursing and Allied Health Literature were searched.

**Study Selection:** Peer-reviewed articles were included if they reported primary data on the physical health of a caregiver of a child with a LLC. Studies were excluded if they described only the caregiver's mental health or if the caregivers were bereaved at the time of data collection.

**Data Extraction:** Of 69 335 unique citations, 81 studies were included in the review.

**Results:** Caregiver health was negatively impacted in 84% of studies. Pain and sleep disturbance were the most common problems. Ways of measuring the physical health of caregiver varied widely. We found an absence of in-depth explorations of the social and economic contexts, which could potentially mitigate the impact of caregiving. Furthermore, we find health interventions tailored to this group remain largely unexplored.

**Limitations:** Studies were heterogenous in methodology, making comparisons of results across studies difficult.

**Conclusions:** These findings support the need for improving access to interventions aimed at improving physical health in this population. The rate of health-seeking behaviors, preventive health care access and screening for health conditions is understudied and represent important directions for further research.

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**Title: Delayed diagnosis and treatment of children with cancer during the COVID-19 pandemic.**

**Citation:** International journal of clinical oncology; Jun 2021

**Author(s):** Dvori, Michal; Elitzur, Sarah; Barg, Assaf; Barzilai-Birenboim, Shlomit; Gilad, Gil; Amar, Shirah; Toledano, Helen; Toren, Amos; Weinreb, Sigal; Goldstein, Gal; Shapira, Adi; Ash, Shifra; Izraeli, Shai; Gilad, Oded

**Background:** COVID-19, the novel coronavirus has caused a global pandemic affecting millions of people around the world. Although children, including children with cancer, have been found to be affected less commonly and less severely than adults, indirect effects of the pandemic on the diagnosis and treatment of children with cancer have been less described.

**Methods:** A survey was performed in the four largest tertiary pediatric hematology-oncology medical centers in Israel. Clinical and laboratory data were collected from the medical files of patients diagnosed or treated with cancer during April-October 2020.

**Results:** Seventeen patients are described, who had a significant delay in diagnosis or treatment of cancer. These represent approximately 10% of all pediatric cancer diagnosed during the study period in these centers. A main cause of delay was fear of exposure to COVID-19 (fears felt by the patient, parent, physician, or decision-makers at the institution; or the implementation of national guidelines). Delays also resulted from co-infection with COVID-19 and the attribution of the oncologic symptoms to the infection. In addition, treatment was delayed of patients already diagnosed with cancer, due to COVID-19 infection detected in the patient, a family member, or a bone marrow donor.

**Conclusion:** Fear from the COVID-19 pandemic may result in delayed diagnosis and treatment of children with cancer, which may carry a risk to dismal prognosis. It is crucial that pediatricians and patients alike remember that other diseases still prevail and must be thought of and treated in a timely fashion.

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**Title: The differential role of practical and emotional support in infant feeding experience in the UK.**

**Citation:** Philosophical transactions of the Royal Society of London. Series B, Biological sciences; Jun 2021; vol. 376 (no. 1827); p. 20200034

**Author(s):** Myers, S; Page, A E; Emmott, E H

**Abstract:** Social support is a known determinant of breastfeeding behaviour and is generally considered beneficial. However, social support encompasses a myriad of different supportive acts, providing scope for diverse infant feeding outcomes. Given the vulnerability of postpartum mental health, this paper aims to explore both how support prolongs breastfeeding and which forms of support promote the positive experience of all infant feeding. Using survey data collected online from 515 UK mothers with infants aged 0-108 weeks, Cox regression models assessed the relationship between receiving different types of support, support need and breastfeeding duration. Quasi-binomial logistic regression models assessed the relationship between receiving support, infant feeding mode and maternal experience of infant feeding. Rates of negative infant feeding experience indicate the widespread need for support: e.g. 38% of currently, 47% of no longer and 31% of never breastfeeding women found infant feeding stressful. Overall, practical support via infant feeding broadly predicted shorter breastfeeding durations and poorer feeding experience; results in relation to other forms of support were more complex. Our findings indicate different forms of support have different associations with infant feeding experience. They also highlight the wide range of individuals beyond the nuclear family on which postpartum mothers in the UK rely. This article is part of the theme issue 'Multidisciplinary perspectives on social support and maternal-child health'.

**Title: COVID-19 and Adolescent Mental Health in the United Kingdom.**

**Citation:** The Journal of adolescent health : official publication of the Society for Adolescent Medicine; Jul 2021; vol. 69 (no. 1); p. 26-32

**Author(s):** Hu, Yang; Qian, Yue

**Purpose:** This study examines the mental health impact of the COVID-19 pandemic on adolescents in the United Kingdom as well as social, demographic, and economic variations in the impact.

**Methods:** Nationally representative longitudinal panel data from the Understanding Society COVID-19 survey were analyzed. The analytical sample comprises 886 adolescents aged 10-16 years surveyed both before and during the pandemic. The Strengths and Difficulties Questionnaire was used to measure adolescents' mental health.

**Results:** The results from person fixed-effects regression models show that adolescents with better-than-median mental health before the pandemic have experienced an increase in their emotional problems, conduct problems, hyperactivity, and peer relationship problems, but a decrease in their prosocial tendency during the pandemic. In contrast, adolescents with worse-than-median mental health before the pandemic have experienced opposite changes in each Strengths and Difficulties Questionnaire domain. Further results from lagged dependent variable regression models show that compared with girls, boys have experienced a smaller increase in emotional problems but a greater decrease in prosocial tendency. The negative mental health impact is particularly prominent among adolescents in one-parent, one-child, and low-income households. Adult household members' COVID-19 symptoms and illness have undermined adolescents' peer relationships.

**Conclusions:** The results reveal the pandemic's diverse impacts on adolescent mental health, which vary with adolescents' prepandemic mental health and sociodemographic backgrounds. The findings underline the need for tailored mental health support for adolescents and targeted measures to mitigate inequalities in the mental health impact of the pandemic.

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**Title: Review: systematic review of effectiveness of art psychotherapy in children with mental health disorders.**

**Citation:** Irish journal of medical science; Jul 2021

**Author(s):** Braitto, Irene; Rudd, Tara; Buyuktaskin, Dicle; Ahmed, Mohammad; Glancy, Caoimhe; Mulligan, Aisling

**Abstract:** Art therapy and art psychotherapy are often offered in Child and Adolescent Mental Health services (CAMHS). We aimed to review the evidence regarding art therapy and art psychotherapy in children attending mental health services. We searched PubMed, Web of Science, and EBSCO (CINHAL®Complete) following PRISMA guidelines, using the search terms ("creative therapy" OR "art therapy") AND (child\* OR adolescent OR teen\*). We excluded review articles, articles which included adults, articles which were not written in English and articles without outcome measures. We identified 17 articles which are included in our review synthesis. We described these in two groups-ten articles regarding the treatment of children with a psychiatric diagnosis and seven regarding the treatment of children with psychiatric symptoms, but no formal diagnosis. The studies varied in terms of the type of art therapy/psychotherapy delivered, underlying conditions and outcome measures. Many were case studies/case series or small quasi-experimental studies; there were few randomised controlled trials and no replication studies. However, there was some

evidence that art therapy or art psychotherapy may benefit children who have experienced trauma or who have post-traumatic stress disorder (PTSD) symptoms. There is extensive literature regarding art therapy/psychotherapy in children but limited empirical papers regarding its use in children attending mental health services. There is some evidence that art therapy or art psychotherapy may benefit children who have experienced trauma. Further research is required, and it may be beneficial if studies could be replicated in different locations.

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**Title: Parent experiences and developmental outcomes following neonatal stroke.**

**Citation:** The Clinical neuropsychologist; Jul 2021; vol. 35 (no. 5); p. 973-987

**Author(s):** Peterson, Rachel K; Williams, Tricia; Dlamini, Nomazulu; Westmacott, Robyn

**Objective:** Parents of children with neonatal stroke offer critical insight into potential avenues to direct neuropsychological care from the time of diagnosis through the early years. The aims of this study were to (1) describe what parents remember about early prognostic discussions with the medical team and (2) to examine the relationships between initial prognoses and the child's current neurodevelopmental status and parents' mental health.

**Method:** Thirty parents of children with neonatal stroke completed the Depression Anxiety Stress Scales (DASS) and Parent Experiences Questionnaire (PEQ). The children of these parents were also seen for neurodevelopmental/neuropsychological assessments.

**Results:** Parents recalled discussions with the medical team about motor, language, cognitive, and academic outcomes, with fewer discussions about the impact of neonatal stroke on their child's social skills, behavior, attention, mental health, and adaptive functioning. Many parents recalled poor initial prognoses following their child's diagnosis, with better than expected outcomes 3 years later. Parent self-reported depression, anxiety, and stress were associated with higher ratings of externalizing symptoms in their child. There were no significant correlations between parent mental health and their perception of their child's internalizing symptoms, neurodevelopmental functioning, or any of the child's medical/demographic factors.

**Conclusions:** This study highlights the role of the neuropsychologist in the child's care in educating families and monitoring outcomes, emphasizes mental health support for parents of children with a history of neonatal stroke, and reiterates how environmental factors outside of the neonatal stroke itself can impact the child's functioning.

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**Title: Associations of job demands and patient safety event involvement on burnout among a multidisciplinary group of pediatric hematology/oncology clinicians.**

**Citation:** Pediatric blood & cancer; Jul 2021 ; p. e29214

**Author(s):** Dunn, Tyler J; Terao, Michael A; Blazin, Lindsay J; Spraker-Perlman, Holly; Baker, Justin N; Mandrell, Belinda; Sellers, Janet; Crabtree, Valerie McLaughlin; Hoffman, James M; Burlison, Jonathan D

**Background:** Workplace burnout can result in negative consequences for clinicians and patients. We assessed burnout prevalence and sources among pediatric hematology/oncology inpatient nurses, ambulatory nurses, physicians (MDs), and advanced practice providers (APPs) by evaluating effects of job demands and involvement in patient safety events (PSEs).

**Methods:** A cross-sectional survey (Maslach Burnout Inventory) measured emotional exhaustion, depersonalization, and reduced personal accomplishment. The National Aeronautics and Space Administration Task Load Index measured mental demand, physical demand, temporal demand, effort, and frustration. Relative weights analyses estimated the unique contributions of tasks and PSEs on burnout. Post hoc analyses evaluated open-response comments for burnout factors.

**Results:** Burnout prevalence was 33%, 20%, 34%, and 33% in inpatient nurses, ambulatory nurses, and MD, and APPs, respectively (N = 481, response rate 69%). Reduced personal accomplishment was significantly higher in inpatient nurses than MDs and APPs. Job frustration was the most significant predictor of burnout across all four cohorts. Other significant predictors of burnout included temporal demand (nursing groups and MDs), effort (inpatient nurses and MDs), and PSE involvement (ambulatory nurses). Open-response comments identified time constraints, lack of administrator support, insufficient institutional support for self-care, and inadequate staffing and/or turnover as sources of frustration.

**Conclusions:** All four clinician groups reported substantial levels of burnout, and job demands predicted burnout. The body of knowledge on job stress and workplace burnout supports targeting organizational-level sources versus individual-level factors as the most effective prevention and reduction strategy. This study elaborates on this evidence by identifying structural drivers of burnout within a multidisciplinary context of pediatric hematology/oncology clinicians.

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**Title: Maternal Work-Life Balance and Children's Social Adjustment: The Mediating Role of Perceived Stress and Parenting Practices.**

**Citation:** International journal of environmental research and public health; Jun 2021; vol. 18 (no. 13)

**Author(s):** Hosokawa, Rikuya; Katsura, Toshiki

**Abstract:** The participation of women with young children in the Japanese labor force has increased dramatically in recent years, bringing growing potential for conflict between work and family roles amid inadequate social systems, such as childcare support. Thus, work-life balance (WLB) of mothers may influence their children's mental health and lifestyle. This study aims to clarify the relationship between parents' WLB and children's mental health, as well as the underlying factors of parental stress and nurturing attitude. The study is based on a questionnaire survey administered in 2019 to fifth-grade elementary school students and their caregivers in Aichi Prefecture, Japan. The regression results indicated that the higher the work-family negative spillover, the higher the child's externalizing and internalizing problems, and the higher the positive spillover, the lower the problems and the higher the prosocial behaviors. Path analysis indicates that maternal WLB is negatively and positively related to children's behavior through maternal stress and parenting practices. The study suggests that maternal WLB is related to children's emotional and behavioral problems. WLB may impact children's emotional and behavioral problems through parents' mental health and involvement with their children, particularly because of work arrangements changing with the COVID-19 pandemic.

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**Title: Long-term outcomes of children with severe chronic pain: Comparison of former patients with a community sample.**

**Citation:** European journal of pain (London, England); Jul 2021; vol. 25 (no. 6); p. 1329-1341



**Author(s):** Wager, Julia; Ruhe, Ann-Kristin; Stahlschmidt, Lorin; Leitsch, Kathrin; Claus, Benedikt B; Häuser, Winfried; Brähler, Elmar; Dinkel, Andreas; Kocalevent, Rüya; Zernikow, Boris

**Background:** Findings on the short- and long-term effectiveness of intensive interdisciplinary pain treatment (IIPT) for children with severe chronic functional pain are promising. However, a definitive appraisal of long-term effectiveness cannot be made due to a lack of comparison groups. The aim of the present study was to compare the health status of former patients with the health status of an age- and sex-matched comparison group from the community.

**Methods:** Data from two samples, a clinical sample of former patients (n = 162; aged 14 to 26) and an age- and sex-matched community sample (n = 162), were analysed. Former patients provided data 7 years after IIPT. Pain characteristics, physical and mental health status, autonomy, coping and health care utilisation were compared between the two samples.

**Results:** Seven years after treatment, the majority (58%) of the clinical sample were completely pain-free. Compared to the community sample, the clinical sample demonstrated worse physical and mental health and continued to seek more frequent health care, irrespective of whether or not they experienced ongoing chronic pain. However, the clinical sample reported better coping strategies and a comparable level of autonomy.

**Conclusion:** Patients experiencing severe chronic pain in childhood who engage in IIPT are likely to have recovered from their pain in early adulthood. Long-term treatment effects may manifest in better coping strategies. However, reduced mental and physical health status may indicate a negative long-term effect of early chronic pain experiences or a general vulnerability in people developing a chronic pain condition in childhood.

**Significance:** The majority of severely impaired paediatric chronic pain patients no longer suffer from chronic pain seven years after intensive interdisciplinary pain treatment. However, former patients have worse physical and mental health status than a community sample, and continue to seek out more frequent health care utilisation, irrespective of whether or not they continue to experience chronic pain. Therefore, potential negative long-term effects of childhood chronic pain experiences need specific attention early on.

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**Title: Mental health and care needs of British children and young people aged 6–17.**

**Citation:** Children & Youth Services Review; Jul 2021; vol. 126

**Author(s):** Fledderjohann ; Erlam, Jayne; Knowles, Bran; Broadhurst, Karen

**Abstract:** We conducted a scoping literature review based on a sample of 51 UK-based research articles published since 2004, focusing on children and young people aged 6–17 years. Taking the 2004 Office for National Statistics survey of child and adolescent mental health as a pivotal point in the development of the field, our aims were to identify the mental health difficulties featured in extant literature since the survey; uncover critical gaps; and propose avenues for advancing the field. Articles were critically reviewed, coded, and summarised. We found socioeconomic disadvantage, family instability and parental distress are cited as key contributing factors to mental distress. Following categorizations in the 2004 survey, emotional, conduct, and hyperactivity difficulties were the most commonly researched and reported topics. The needs of migrant, BAME, physically disabled, and LGBTQ children were severely underrepresented in the literature, as were those of looked after children. We also found a strong reliance on clinic-based convenience samples, which

obfuscates the needs of children who are not able to access care. Further research using inclusive, population-based samples and diverse methods is needed going forward.

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**Title: Different nutritional screening tools and recommended screening algorithm for pediatric oncology patients.**

**Citation:** Clinical Nutrition; Jun 2021; vol. 40 (no. 6); p. 3836-3841

**Author(s):** Gallo ; Horvath, Klara; Czuppon, Krisztina; Tomsits, Erika; Felegyhazi, Edina; Kovacs, Gabor T.

**Abstract:** Cancer is one of the leading causes of death for children; however, appropriate nutritional status can positively affect disease progression and outcome. The aim of this study was to present our self-developed nutritional risk screening method, relate it to another validated tool and to objective bio-impedance measures. We intended to recommend a screening algorithm which can be used in our pediatric oncology facilities. We analysed data from 109 pediatric oncology patients (age 3–18) at the 2nd Department of Pediatrics, Semmelweis University between 2017 and 2018. The nutritional status was assessed by the Nutrition screening tool for childhood cancer (SCAN), Nutrition risk screening for pediatric cancer (NRS-PC) our own self-developed screening tool and Bio-impedance analysis (InBody 720 and S10). Classifier properties for low muscle mass measured by Bio-impedance analysis were compared for SCAN and NRS-PC in the overall sample and in the different phases of the disease. The AUC of 0.67 [95% CI:0.58,0.75] of the SCAN was significantly lower ( $Z = -2.46$ ,  $p = 0.014$ ) than in the case of the NRS-PC (AUC = 0.75 [95% CI:0.67,0.82]), indicating that NRS-PC has better classifier properties to identify children with lower muscle mass. No significant difference was found in the different phases of the disease. Based on our results, we suggest screening high BMI patients first with NRS-PC. However, in case of low BMI bio-impedance measures provide more precise information on muscle mass and nutritional risk. Further data are needed to decide whether the NRS-PC is sensitive enough in normal BMI patients.

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**Title: A commentary on 'A systematic review examining the association between body image and infant feeding methods (breastfeeding vs. bottle-feeding)'.**

**Citation:** Journal of Health Psychology; Jul 2021; vol. 26 (no. 8); p. 1126-1131

**Author(s):** Bigman ; Homedes, Nuria; Wilkinson, Anna V

**Abstract:** A systematic review is a valuable and influential research method that aims to identify and synthesize all literature relevant to the research question at hand. A well-conducted systematic review benefits the scientific community by providing a summary of all the existing evidence as well as generating new hypotheses and highlighting gaps in the literature. However, when a systematic review does not adhere to the recommended guidelines, it may introduce selection bias and generate false conclusions. Here, we present a commentary on a systematic review by the scholars Morley-Hewitt and Owen titled ' A systematic review examining the association between female body image and the intention, initiation, and duration of postpartum infant feeding methods (breastfeeding vs. bottle-feeding) ' that included nine peer-reviewed articles but missed at least eight other peer-reviewed articles that aligned with their study aim, and therefore introduced selection bias in the review. To complete the missing piece, we provide a short summary of these additional articles and describe how they align with this systematic review.

**Title: Addressing obesity in the first 1000 days in high risk infants: Systematic review.**

**Citation:** Maternal & Child Nutrition; Jul 2021; vol. 17 (no. 3); p. 1-58

**Author(s):** Rossiter ; Cheng, Heilok; Appleton, Jessica; Campbell, Karen J.; Denney-Wilson, Elizabeth

**Abstract:** Early intervention is critical for addressing the challenge of childhood obesity. Yet many preventive interventions do not target infants most at risk of future overweight or obesity. This systematic review examines interventions delivered before 2 years that aim to ameliorate excess weight gain among infants at high risk of overweight or obesity, due to sociodemographic characteristics, parental weight or health status, infant feeding or health behaviours. We searched six databases for interventions: (a) delivered before age two, (b) specifically aimed at infants at high risk of childhood obesity and (c) that reported outcomes by weight status beyond 28 days. The search identified over 27,000 titles, and 49 papers from 38 studies met inclusion criteria: 10 antenatal interventions, 16 postnatal and 12 conducted both before and after birth. Nearly all targeted infant and/or maternal nutrition. Studies varied widely in design, obesity risk factors, outcomes and quality. Overall, nine interventions of varying quality reported some evidence of significantly improved child weight trajectory, although effects tended to diminish over time. Interventions that improved weight outcomes tended to engage parents for a longer period, and most offered health professional input and support. Two studies of limited quality reported significantly worse weight outcomes in the intervention group.

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**Title: Upper Lip Tie: Anatomy, Effect on Breastfeeding, and Correlation With Ankyloglossia.**

**Citation:** Laryngoscope; May 2021; vol. 131 (no. 5)

**Author(s):** Shah ; Allen, Paul; Walker, Ryan; Rosen-Carole, Casey; McKenna Benoit, Margo K.

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**Title: Decreasing Unplanned Extubations in the Neonatal ICU.**

**Citation:** Respiratory Care; Jul 2021; vol. 66 (no. 7); p. 1059-1062

**Author(s):** Igo ; Kingsley, Kimberly M.; Malaspina, Elisabeth M.; Picarillo, Alan P.

**Background:** Unplanned extubation (UE) is a preventable adverse event and may lead to additional complications such as cardiovascular resuscitation or respiratory compromise in a critically ill neonate during an emergent re-intubation. A quality improvement project to reduce unplanned endotracheal tube dislodgement would reduce these morbidities. We aimed to reduce UEs in the NICU to 1 UE/100 ventilator days by October 2018.

**Methods:** As of the baseline period (March 2017 to November 2017), our level 4 NICU had 950 annual admissions and a baseline rate of 9.9 UEs/100 ventilator days. We formed an inter-professional task force consisting of a neonatologist, 2 respiratory therapists, and the NICU nurse educator. We tracked all of our UE events and required the staff involved to file an electronic safety report. PDSA (plan-do-study-act) cycles consisted of staff attitude survey, development of a data collection tool, protocol of 2 staff members for all transfers of intubated patients, staff education around securement device, and daily retaping of endotracheal tubes to securement device. UE events and ventilator days were extracted from a respiratory database and the electronic medical record.

**Results:** A special cause variation was noted via control chart rules for the mean UE rate from a baseline of 9.9 UEs/100 ventilator days in the baseline period compared to a post-intervention mean of 1.6 UEs/100 ventilator days for the period of August 2018 to March 2019). During the intervention phase of the project (December 2017 to July 2018), a special cause variation was noted with a UE rate of 5/100 ventilator days.

**Conclusions:** Development of a quality improvement project by a multidisciplinary taskforce, along with several PDSA cycles including education and staff awareness, reduced the UE rate by 84% in a level 4 NICU. Ongoing surveillance, education, and review of UE cases will be key to maintaining UE events at a goal of 1 UE/100 ventilator days.

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**Title: Reducing Computed Tomography Scan Utilization for Pediatric Minor Head Injury in the Emergency Department: A Quality Improvement Initiative.**

**Citation:** Academic Emergency Medicine; Jun 2021; vol. 28 (no. 6); p. 655-665

**Author(s):** Arora ; White, Emily N.; Niedbala, Deborah; Ravichandran, Yagnaram; Sethuraman, Usha; Radovic, Nancy; Watson, Kristin; Nypaver, Michele; Yadav, Kabir

**Background:** The validated Pediatric Emergency Care Applied Research Network (PECARN) prediction rules are meant to aid clinicians in safely reducing unwarranted imaging in children with minor head injuries (MHI). Even so, computed tomography (CT) scan utilization remains high, especially in intermediate-risk (per PECARN) MHI patients. The primary objective of this quality improvement initiative was to reduce CT utilization rates in the intermediate-risk MHI patients.

**Methods:** This project was conducted in a Level I trauma pediatric emergency department (ED). Children < 18 years evaluated for intermediate-risk MHI from June 2016 through July 2019 were included. Our key drivers were provider education, decision support, and performance feedback. Our primary outcome was change in head CT utilization rate (%). Balancing measures included return visit within 72 hours of the index visit, ED length of stay (LOS), and clinically important traumatic brain injury (ciTBI) on the revisit. We used statistical process control methodology to assess head CT rates over time.

**Results:** A total of 1,535 eligible intermediate-risk MHI patients were analyzed. Our intervention bundle was associated with a decrease in CT use from 18.5% (95% confidence interval [CI] = 14.5% to 22.5%) in the preintervention period to 13.9% (95% CI = 13.8% to 14.1%) in the postintervention period, an absolute reduction of 4.6% (p = 0.015). Over time, no difference was noted in either ED LOS or return visit rate. There was only one revisit with a ciTBI to our institution during the study period.

**Conclusions:** Our multifaceted quality improvement initiative was both safe and effective in reducing our CT utilization rates in children with intermediate-risk MHI.

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**Title: The Impact of Diagnostic Decisions on Patient Experience in the Pediatric Emergency Department.**

**Citation:** Pediatric emergency care; Jun 2021

**Author(s):** Gorski, Jillian K; Mendonça, Eneida A; Showalter, Cory D

**Objective:** Patient experience serves as both a subjective measure of value-based health care delivery and a metric to inform operational decision making. The objective of this study was to determine if specific diagnostic and therapeutic interventions affect patient experience scores for children seen in the emergency department.

**Methods:** We performed a retrospective observational study in the emergency department of a large quaternary care children's hospital on patients who were discharged to home and later completed a National Research Corporation Health patient experience survey. We matched the survey results to electronic health record (EHR) data and were able to extract demographics, operational metrics, and order information for each patient. We performed multiple logistic regression analyses to determine the association of image acquisition, laboratory test ordering, medication administration, and discharge prescribing with likelihood to recommend the facility as our measure of patient experience.

**Results:** Of the 4103 patients who met inclusion criteria for the study, 75% strongly recommended the facility. Longer wait times were associated with lower patient experience scores [odds ratio (OR) per waiting room hour increase, 0.72; 95% confidence interval (CI), 0.65-0.81]. Significant diagnostic factors associated with higher patient experience included magnetic resonance imaging ordering (OR, 2.38; 95% CI, 1.00-5.67), x-ray ordering (OR, 1.19; 95% CI, 1.00-1.42), and electrocardiogram ordering (OR, 1.62; 95% CI, 1.07-2.44). Of the treatment factors studied, only antibiotic prescribing at discharge was found to have a significant positive association with patient experience (OR, 1.32; 95% CI, 1.08-1.63).

**Conclusion:** The positive association between more intensive diagnostic workups and patient experience could have implications on the utility of patient experience scores to evaluate pediatric care teams. Consideration should be taken to interpret patient experience scores in the context of compliance with approaches in evidence-based medicine.

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**Title: Evaluation of a Quality Improvement Intervention to Improve Pediatric Palliative Care Consultation Processes.**

**Citation:** The American journal of hospice & palliative care; Jun 2021 ; p. 10499091211026675

**Author(s):** Stoyell, Jennifer Forsman; Jordan, Megan; Derouin, Anne; Thompson, Julie; Gall, Sarah; Jooste, Karen R; Keskinyan, Vahakn Shant; Lakis, Kristen Register; Lee, Yu-Lin Amy; Docherty, Sharron

**Background:** A critical aspect of pediatric palliative care consultations is the assessment and documentation of patient and family needs. While these assessments usually include a focus on physical pain, there is less standardization of assessments of other physical symptoms and psychosocial, emotional, or spiritual needs.

**Aims:** To improve the breadth of assessment of psychosocial and emotional needs, screen for symptoms other than pain among pediatric patients utilizing palliative care services, and to increase documentation of assessment data from 30%-40% to 80% through practice changes implemented in 2 Plan-Do-Study-Act (PDSA) cycles.

**Methods:** This quality improvement project involved implementing provider education and adapting the palliative care consultation template in the electronic health record to improve breadth and consistency of assessment and documentation during consultations by the interdisciplinary pediatric palliative care team. Two PDSA cycles were performed. Chi squared tests and statistical control charts were used for data analysis.

**Results:** There was statistically significant improvement in the inclusion of documentation of a pediatric palliative care social work note from baseline (32%) to Cycle 2 (57%). Physical symptom screening declined slightly, but not significantly ( $p = .32$ ) and socio-emotional discussions also declined but not significantly ( $p = .05$ ).

**Conclusions:** Screening for physical symptoms and discussions with patients and families about psychosocial/emotional needs during the initial palliative care consultations are extremely important in providing effective, holistic, patient-centered care. There is a need for development of pediatric-centric guidelines and quality measures to evaluate pediatric

palliative care programs; further research is indicated to determine methods for evaluating compliance with these guidelines.

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**Title: Implementation of a nurse-driven pediatric bowel management algorithm: A quality improvement project.**

**Citation:** Journal of pediatric nursing; Jun 2021; vol. 61 ; p. 224-228

**Author(s):** Van Orne, Julie

**Background:** In September 2018, a staff survey on a 16-bed pediatric neuro-rehab care unit (RCU) revealed nurses felt their care was limited with few resources available to treat patients experiencing constipation. Based on guidelines published by the North American and European Societies for Pediatric Gastroenterology, Hepatology, and Nutrition, an evidence-based algorithm was implemented in the RCU.

**Aims:** The aims of this project were to reduce the need for invasive constipation treatment and to improve nurse satisfaction.

**Methods:** An evidence-based interventional quality improvement project, based on the Plan-Do-Study-Act (PDSA) method, was initiated by RCU's clinical nurse leader. To measure impact on patients, use of invasive treatment was tracked in the electronic medical record. To measure impact on staff, a staff satisfaction survey was completed pre- and post- project implementation.

**Results:** There was a statistically significant reduction in average rates of invasive medication administration between pre-intervention (M = 2.23, SD = 0.77) and post-intervention (M = 0.79, SD = 0.52;  $t(7) = 3.38$ ,  $p = 0.01$ ). A Wilcoxon Signed Rank Test revealed a statistically significant improvement in post-intervention nurse satisfaction for having tools and resources ( $z = -5.196$ ,  $p < 0.001$ ).

**Conclusions:** The findings of this quality improvement project showed that nurse-driven protocols based on current evidence can improve the prevention and treatment of constipation by reducing the need for invasive constipation treatment and improve nurse satisfaction.

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**Title: Improving the Timing of Laboratory Studies in Hospitalized Children: A Quality Improvement Study.**

**Citation:** Hospital pediatrics; Jun 2021

**Author(s):** Ramazani, Suzanne N; Gottfried, Julie Albright; Kaissi, Maha; Lynn, Justin; Leonard, Michael S; Schriefer, Jan; Bayer, Nathaniel D; UR Medicine GCH PHM QI Team

**Objectives:** For hospitalized children and their families, laboratory study collection at night and in the early morning interrupts sleep and increases the stress of a hospitalization. To change this practice, our quality improvement (QI) study developed a rounding checklist aimed at increasing the percentage of routine laboratory studies ordered for and collected after 7 am.

**Methods:** Our QI study was conducted on the pediatric hospital medicine service at a single-site urban children's hospital over 28 months. Medical records from 420 randomly selected pediatric inpatients were abstracted, and 5 plan-do-study-act cycles were implemented during the intervention. Outcome measures included the percentage of routine laboratory studies ordered for and collected after 7 am. The process measure was use of the rounding checklist. Run charts were used for analysis.

**Results:** The percentage of laboratory studies ordered for after 7 am increased from a baseline median of 25.8% to a postintervention median of 75.0%, exceeding our goal of 50% and revealing special cause variation. In addition, the percentage of laboratory studies collected after 7 am increased from a baseline median of 37.1% to 76.4% post intervention, with special cause variation observed.

**Conclusions:** By implementing a rounding checklist, our QI study successfully increased the percentage of laboratory studies ordered for and collected after 7 am and could serve as a model for other health care systems to impact provider ordering practices and behavior. In future initiatives, investigators should evaluate the effects of similar interventions on caregiver and provider perceptions of patient- and family-centeredness, satisfaction, and the quality of patient care.

### **Sources Used:**

The following databases are used in the creation of this bulletin: Amed, British Nursing Index, Cinahl & Medline.

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