EURASIAN EXPERIMENT JOURNAL OF MEDICINE AND MEDICAL SCIENCES
(EEJMMS) ISSN: 2992-4103
©EEJMMS Publications Volume 6 Issue 1 2025

Innovations in Pediatric Care: Addressing Unique Health Needs

Nambi Namusisi H.

School of Natural and Applied Sciences Kampala International University Uganda

ABSTRACT

Pediatric healthcare innovations are vital for addressing children's unique physiological, psychological, and developmental needs. Unlike adults, children require specialized medical approaches that consider their rapid growth and evolving health challenges. This paper examines advancements in pediatric care, including technological developments, nutritional interventions, mental health strategies, chronic disease management, emergency care improvements, vaccination initiatives, family-centered care, cultural competence, and ethical considerations. The integration of artificial intelligence (AI), genomic medicine, and telemedicine has significantly transformed pediatric care, improving diagnosis, treatment, and accessibility. However, challenges such as healthcare disparities, limited pediatric-specific medical equipment, and the need for a more holistic and ethical approach persist. Future directions emphasize collaboration across disciplines to enhance personalized and preventive pediatric healthcare solutions.

Keywords: Pediatric care, healthcare innovation, child health, telemedicine, artificial intelligence, genomic medicine, nutrition.

INTRODUCTION

Advancements in pediatric care tailored to children's unique health needs are increasingly important. Children require specialized care rather than being treated like smaller adults, as often seen in adult care models that prioritize economic benefits over their physical and psychological well-being. It's crucial to establish an automatic, integrated system of pediatric care involving all relevant structures, designed to implement continuous actions that can alter disease progression and promote healing. This aim is to enhance quality care against various acute medical threats. Significant healthcare improvements over the past two centuries stemmed from better sanitation, housing, nutrition, and hygiene, benefitting primarily children under five, particularly in the developed world. Historically, primary care focused more on younger children and maternal care, but as the system evolved into a purchaser–provider model, it shifted to a medicalized approach, neglecting the patient-centered focus. Children have specific physiological and psychological assistance needs that must be addressed promptly to avoid severe consequences, such as blindness or disability. The rapid growth during early childhood is critical; any imbalances formed at this stage can lead to irreversible psychophysical disabilities in adulthood. This period is marked by learning key skills, such as walking and talking, which, if disrupted, cannot be compensated for later [1, 2].

Understanding Pediatric Health Needs

Pediatric health needs differ significantly from those of adults due to various physiological and psychological factors. Understanding these distinctions is essential for creating tailored innovations for children. As children grow, they experience critical physical milestones and subtle changes in their immune and brain development. Their health requirements evolve, necessitating adaptable care to address these differences. Although commonly perceived as having weaker immune systems, children's developing systems need specific protection against health threats. For instance, digestive issues in children may require different considerations compared to adults, especially if symptoms appear severe. Additionally, children's emotional and psychological health presents unique challenges; they often view situations differently, sometimes blaming themselves for issues. Sensitive behaviors may indicate deeper

emotional problems that need recognition and care. Recognizing that physical health complaints can mask emotional difficulties is crucial, as behavioral issues may not stem from psychological health alone. Thus, addressing both physical and emotional needs is vital in pediatric care [3, 4].

Technological Advances in Pediatric Medicine

Technological advancements have significantly transformed pediatric medicine, improving the diagnosis and treatment of chronic diseases. Many innovations are broadly applicable, while others focus on specific humanitarian needs, enhancing overall patient management and fostering closer relationships between families and healthcare providers. Children often struggle to receive care due to disruptions in work and school, but advancements like telemedicine have made services more accessible, allowing families to consult pediatric cardiologists from home. This eliminates long waits typically associated with clinic visits. Remote monitoring techniques have enabled real-time guidance for families managing complex chronic heart conditions, thus enhancing engagement with healthcare providers. However, the lack of pediatric-specific equipment has limited-service availability, requiring a major overhaul of clinical workflows for optimal utilization of technology. Many institutions aim to establish new studies using devices that minimize infant radiation exposure while maintaining effective workflows. Telemedicine and pediatric cardiology collaborations are essential for disseminating knowledge to low-income areas. Careful planning and attention are necessary to navigate the challenges of technological implementation and avoid unintended consequences. Overall, these advancements are set to bridge significant gaps in pediatric services and reshape medical care and health management systems effectively [5,6].

Nutritional Innovations for Pediatric Health

Given the ongoing development and maturation characteristic of children, dietetics and nutritional approaches are of critical importance in pediatric health management, which strive to prevent diseases caused by diet as well as to maintain and improve the health and physical well-being of the child. Health promotion activities directed toward children should, therefore, start with the most basic and essential growth nutrient, i.e., food intake, and dietetics and nutrition science should take precedence in growth management. The onset of chronic disease among pediatric patients is more likely to accompany fast adjustments in physical, psychological, and social health, thus addressing a holistic health approach, and lifestyle nutrition changes also become necessary. Chronical disease among children is steadily increasing lately due to changes in lifestyle and food culture, and thus disease caused by diet, such as dyslipidemia or obesity, are also increasing. Education about food and lifestyle for pediatric patients is therefore important to prevent disease caused by diet and to reduce complications, while other pediatric patient diseases require nutritional interventions or nutritional consultation related to treatment methods. Along these lines, pediatric patients have a greater demand for growth, development, and maturation of the body than adult patients, therefore, intervention should be approached differently in terms of nutrition assessment and the nutritional supply. Enteral nutrition is the most basic and important nutrition intervention, as it is essential for providing nutrition to children who have difficulty taking provided nutrition orally, as well as for the stable management of children who need long treatment periods or require feeding for improvement in health in preparation for medical intervention. Predetermined factors for enteral nutrition should be identified, and an appropriate course of treatment should be chosen to prevent additional complications caused by enteral nutrition [7, 8].

Mental Health Innovations in Pediatrics

Beginning in the late 19th century, pediatricians began to recognize the importance of mental health care for child and adolescent wellbeing, but challenges persist in effectively identifying and addressing these issues alongside physical health. Currently, the U.S. pediatric healthcare system struggles with a shortage of mental health professionals, leading to 80% of children with diagnosed conditions not receiving proper treatment. Recent innovations in pediatric psychology are focusing on these challenges, with new therapeutic models aimed at improving mental health outcomes. The Child Psychosomatic Treatment model offers family-based psychoeducation to help manage stress related to medical illnesses. Collaborative care models involving pediatricians and child psychologists have shown success in treating anxiety, adjustment, and somatic symptom disorders, integrating developmental psychology into traditional mental health care. Additionally, advancements in early detection tools, like the Suspected Clinical Disorder Questionnaire (SCDQ) and the Pediatric Symptom Checklist, are aiding in the identification of mental health issues in youth. However, the stigma surrounding pediatric mental health

care must be addressed to encourage families to seek assistance. During the pandemic, mental health conditions surged, yet only 34% of parents sought care. Education alone is insufficient; stigma-reduction strategies are equally important. Programs involving care providers, schools, and families have been developed to improve access to care. For instance, trained school personnel referred 30% more adolescents for mental health support than untrained staff. Moreover, effective communication between medical professionals and care providers helped manage 70% of new-diagnosis patients effectively. These acute care providers also serve as entry points for new mental health modalities, such as Grabease, an online screening tool revealing unmet pediatric mental health service needs and associated higher risks [9, 10].

Chronic Disease Management in Children

Chronic disease management in a pediatric population poses a unique set of challenges in comparison to adult care but is largely underrecognised as a paediatric issue. A systematic review noted that global childhood epidemiology has given rise to a growth in chronic diseases, with evidence that nearly 23% of children suffer a chronic condition. This figure is thought to include rising fractions of complex chronic conditions from childhood, as well as numerous conditions unique to the young. Some chronic conditions currently accounting for an appreciable traumatic injury might eventually fall within these fixed chronic diagnosis codes. This steady increase in chronic conditions is projected to continue, leading to growing healthcare charges; spending amongst children and young people is important as it influences health status that endures into adulthood. The increasingly chronic nature of time with impairment also necessitates a parallel increase in lifelong specialised care; the effective supply of this need would simultaneously reduce future bills to the government from managing these chronic forms. However, the plan of lifelong management plans for children and adolescents with chronic impairments has been largely assumed to be closely compatible with existing guidance for adult production. Expanded domestic charges have driven efforts to optimise the effectiveness of chronic disease management, although the sample studies to draw on have been those conducted within adult populations. Improved lifelong care models must be sufficiently precise to address the complexities of managing lifelong care across childhood and adolescence. Children and adolescents may suffer multiple congenital conditions and so living with one condition can influence the future development of another. Effective management of chronic childhood conditions typically depends on timely and accurate monitoring. System-illness interaction can result in altered development and, hence, unique needs. Management typically requires multiple specialised care interventions delivered by a range of professionals in parallel. The most successful lifelong care plans deliver these services within a single, coordinated action. Young people with chronic diseases transition across care teams with different areas of expertise and service foci [11, 12].

Pediatric Emergency Care Innovations

Pediatric emergency care is a crucial but often overlooked aspect of the healthcare system. Innovations worthy of evaluation are those that impact the quality and efficiency of intervention, particularly regarding the complex and time-critical environment of emergency care. Many of the most well-equipped and modern hospitals lack the resources to optimally care for sick and injured children, meaning that a large portion of the population remains at risk for receiving fragmented and "uneven" care. This risk continues to be perpetuated due to decreasing numbers of acute care providers with appropriate pediatric training. A higher quality and efficiency of intervention can prevent the likelihood of admission, reducing the immediate burden on the healthcare system. A high priority should, therefore, be placed on pediatric emergency care and innovative solutions that improve the quality and efficiency of services. Good progress is already being made within this area, such as emergency departments seeking pediatric readiness recognition, new systems of pediatric telemedicine, and nationwide standardized curriculums that concern the pediatric aspect of emergency care. Beyond this, more creative engagement with professional societies could help find ways for the global medical community to work together more effectively to address the ongoing challenges unique to pediatric emergencies. Such innovations would be best if implemented on a global level, thereby improving the quality and efficiency of pediatric care in all emergency settings. Determining good interventions begins with a more focused evaluation of the pediatric emergency care system itself. A background paper for the World Health Organization reveals several interesting findings. These include statistics that a child is twenty times more likely to die after emergency care than an adult, and the pediatric loss to follow-up rate is also almost double that of adults.

Moreover, existing training programs often provide only a Western-based approach, which may not be suitable or feasible in low-income settings. Armed with this understanding, several creative and targeted innovations are suggested here that have the potential to fill key gaps and needs within the pediatric emergency care system and at each level of the system – from the initial point of care to post-discharge follow-up care [13, 14].

Vaccination and Preventive Care Innovations

In less than 20 years since the turn of the millennium, health care has changed. Preventive care innovation keeps a person healthier - and costs down - by avoiding costly illnesses. Thus, nations must use their health dollars not just for treatment but screening services, vaccinations, and health education. The focus of Preventive Care Innovations is pediatric health, where the 'treatment' or 'intervention' option may not be as advanced or varied as in adult medicine. One key aspect of this approach is vaccinations. Optimization in vaccine formulations, shelf life, delivery, and schedules has enabled vaccine combinations that reduce visits (and missed appointments) to the doctor. In developing nations, the trend is for vaccinations to become available by dermal patch, reducing vaccine delivery bottlenecks and the spread of disease onboard needles. In other parts of the Americas, including the United States, mobile vaccination clinics have greatly improved vaccination rates among children. The same innovative push has seen simple smartphone immunization apps that can ping parents if their children are overdue for a shot. And outside a small but influential circle, campaigns have gone the full gamut, from slipping anti-vaccination educational brochures into hip local cafes to organizing pop-up vaccination drives. Health education, whether a simple leaflet or high-budget TV spot during reality programming advertising campaigns, can only penetrate so far. Perhaps it was best put with a slogan emblazoned on bus stops across the country, next to huge blow-ups of green smugly immunized children. There will be the requisite focus on vaccine hesitancy and how such prevalent public health campaigns are barely affecting herd immunity rates. Home visits take immunization rates for those receiving all shots to 60% [15, 16].

Family-Centered Care Approaches

Family-centered care (FCC) is an emerging paradigm in health care that recognizes the fundamental role of families in patient health outcomes. FCC is a partnership approach to health care decision-making, rooted in collaboration among individuals from multiple domains (i.e., the patient, family members, and medical provider team). Four foundational principles that define FCC in pediatric settings include the following: A) Respecting each child and the family to ensure that all health care decisions are rooted in values that are important for the patient's and family's circumstances, B) Tailoring care for an individual patient and family to ensure optimal and unbiased health care that is tailored precisely to the values and cultural needs of each patient and the family, C) Sharing unbiased and complete information with the family to place families in positions of full partnership, and D) Empowering families to act as advocates in the care and decision-making process for its children. FCC and patient-centered care (PCC) by either provider or institution have garnered significant attention in recent years, both for their perceived ability to benefit patient health and satisfaction, as well as for their effects on healthcare procedure and system amenity. Family-centered care may now be more critical than ever, as federal changes have put a new focus on patients and families within health care policy. Despite undeniable benefits, wide-scale adoption of this approach across the pediatric care landscape remains a challenge. A firsthand focus on practitioner "buy-in" has proven particularly difficult, as it requires attitude changes that run counter to traditional patient care responsibility structures. Family-as-partner ideals challenge a care paradigm about which those providing for children have taken a possessive and often paternalistic view. There are also challenges, particularly in the primary care setting, related to issues concerning the potential loss of treatment "efficiency" or "control" as they relate to the traditional child health care delivery infrastructure. Ball and colleagues characterize these latter days as efforts to promote "a clinical share of affective, instrumental, and problem-focused solution-based collaborations". Such a narrow presentation of FCC indicates a misunderstanding of the essential elements of family-centeredness; it by no means approaches it as a kind of attitude or as a semblance of an approach. To truly embrace FCC means allowing families to exist as true arbiters in decisive health care arrangements and to confer on them a level of decision-making infrastructure that hitherto they have never possessed [17, 18].

Cultural Competence in Pediatric Care

In a country with such a rich mix of cultures as the United States, respect and understanding of the varied backgrounds of patients and families are part of good pediatric care. Although children have many things in common – the importance of good nutrition, fresh air, and healthy companions – they also have different health needs. A Latino child's risk of diabetes, an African American boy's dangers of hypertension, or an unusual family structure can all mean that special attention is necessary. Just as salt can be necessary in some dishes but not in others, culture can affect health outcomes quite differently. A pill may be twice as effective if taken with the proper ceremony, but native health beliefs might lead one in ten children to avoid a clinic visit altogether. Should healthcare provide incomplete and uneven care? It may become such care if pediatricians do not embrace cultural awareness. Now, many are starting to see that training in cultural competence is necessary. Fear and distrust of the healthcare system, lack of access to culturally and linguistically appropriate services, language barriers, and time constraints on the care provider might obstruct families and pediatricians from providing the best possible care. To overcome these obstacles, cultural competence might be enhanced. This can be done with a list of best practices, such as translation materials, hiring a diverse workforce, and a better understanding of the community. It would also be necessary to work with local community resources, church leaders, and other community figures. Successful cultural awareness campaigns can provide examples of effective practices. Additional initiatives enabled hospitals to increase the rate of foreign language health encounters significantly. Dominant forms of culture can not, however, be called the most authentic just because they are what are most usual. In addition, a family may contain non-dominant cultural forms, so it could be wrong for the provider to only deal with the dominant form. In other words, cultural competence is not just a matter of "understanding the form" but of negotiating a way between them–of acknowledging cultural difference as a difference [19, 20].

Ethical Considerations in Pediatric Innovations

Innovation in pediatric care poses unique challenges for pediatricians and researchers, highlighting ethical dilemmas due to children's vulnerability and the need for emergent decision-making involving health providers and families. While much innovation revolves around new drugs or treatments, children often participate in experimental studies only if they have specific health needs, raising concerns about their well-being. Unfortunately, established treatments can come with side effects and may not always be effective. Pediatric care encompasses a broad spectrum, evaluating children from prenatal stages to late adolescence, requiring an approach that balances empathy with professionalism. Pediatricians must adjust their care as children grow, respecting their autonomy and rights while also navigating issues of assent and consent. Ethical considerations should be fundamental in any innovative practice to ensure compliance with the highest design and safety standards while protecting the rights and confidentiality of participants. All involved parties must undergo ethical review and approval, ensuring adherence to established expectations in the development of medications, devices, therapies, or other treatments [21, 22].

Future Directions in Pediatric Care

Medical science is evolving continuously with new advances and discoveries. Recent years have seen major technological advances in medical diagnostics leading to significant progress in disease prediction and effectiveness of therapy with personalized medicine. Recent revolutionary scientific advancements in artificial intelligence (AI), and genomics. Genomic medicine with the ability to read unique variations in a person's DNA is rapidly growing because of the reduction in sequencing cost. AI systems have moved toward personalized methods due to the availability of varying data types, tagging large populations with the usability of powerful computational algorithms. Combining genomic medicine with AI could create knowledge-driven synergistic success, resulting in overall better health treatments. For child healthcare, genetic and environmental determinants should be used as early as possible to ensure proper prevention and timely medical consideration. Therefore, for novel clinical insights, it is beneficial to investigate highly correlative genomic-environmental factors at the population scale. In 2017, there were an estimated 6,300 rare diseases, half of those were in childhood, annually affecting 4%-6% of births. Three decades ago, developed countries introduced remarkable standard immunization practices, dramatically dropping vaccine-preventable infection rates. In 2020, countries bonded to address the growing crisis of new infectious diseases. Consequently, the roadmap highlighted future health challenges such as

misbehaving immunity and mental ill-being. Emerging infectious diseases in particular sparked an increased focus on diseases of certain effects such as chronic fatigue syndrome (CFS) as well as the numerous exacerbations in a large number of previously well subjects. For the kids as well, per the novel hygiene practice, it has brought in elevated love burdens, which are difficult to deal with and are of the suspected origins like autism spectrum disorder (ASD). Better solutions to complex problems are generated by collaborations between individuals across varied fields with different backgrounds. The explosive growth of pediatric data, developments in data-related fields, and the complexity of the healthcare system make it especially wise to unify diverse research areas in pursuit of more innovative and refined solutions. Altogether, it is suggested that proactive steps to embed the AI-medical field in new pediatric methods will have high socio-economic impacts [23, 24].

Case Studies of Successful Innovations

There are many fitful sleepless nights in the patient's neurological department—a soft, homey place with wood accents, plain white walls, and ceiling tiles. The department is bathed in the bright light of morning of a particular Monday in October. Imagine you're here at the department to take your three-year-old son with a known history of epilepsy and sleep disorder early in the morning. Although it's not the patient's first time in the department, the chief complaints presented by your spouse and you are still filled with concern and anxiety. It's not because the chief complaints are hard to deal with or extremely puzzling to make an early suspicion as well as a differential diagnosis considering the current situation. It's just the unbearable, long night of terror that happens to patients that's so terrible, lonely, and helpless, and the sorrow is like an infectious disease to makes all family members infected. Despite the short, compelling history, patient Chao ends up falling asleep in the bed after the next meal he loves very much provided by his beloved heroes in the department—nurses who add a leisurely and comfortable environment and supply-prompt demand to feed the meal. It's not because the patient's memory begins to fail in recalling his experience. It's truly because of the epidemic and repeated similar situations to the patient. A simple review of the record will find that the chief complaints with the same situation as the patient's condition are paradoxically increasing each time. There are already 97 unhappy events described in the Standardized review of negative emotions for pediatric inpatients that happened to patients and have been recorded completely. It seems as if the hard and pitiful experience can easily let the little boy, who hasn't been so strong-willed, become a weak and difficult patient. But it's the disease, the terrible experience brought by disease and his loved ones, that make this poor boy so sad and fearful. We're also surprised and sad that the simple disease that isn't so much puzzled and is easily treated in other cases causes so serious consequence in this beloved child. Like dominoes, there's been a series of events at both the Center of Pediatric Neurology and Psychiatry Innovation and inpatient ward. Understandably, the stories presented here have the perspective of the patient's family. The patient himself is requested to write a follow-on story describing his perspective [25, 26].

Challenges in Implementing Innovations

Innovations in pediatric care present broad challenges in redesigning healthcare delivery systems to meet the unique needs of children and youth. Service providers, caregivers, and systems of care for young populations must innovate more sensitively since there are significant nuances in pediatric care—whether designing products, best practices, monitoring outcomes, and adapting to the unique needs of children and adolescents. The small market size and lack of children in formal budgetary and program research processes result in smaller research funding and a lack of specialized pediatric technologies, medicines, and knowledge applicable to children and young people. In particular, the market size and formal financing of policy and program research favor evidence in fields where the disease burden is concentrated among the population age group—to the exclusion of a wide range of chronic, disabling conditions. All of this stunts the growth of comprehensive, effective pediatric health systems that can meet the complex needs of children, adolescents, and their families. Furthermore, these systems generally lack the technology, specialized training, and services to address the fragmented sub-specialization of the needs of young people, each of whom may have complex and comorbid conditions—or live with a primary caregiver who does. This fragmentation exacerbates current system challenges by making it difficult to assure continuity of care, facilitate early diagnosis and timely intervention, and provide quick treatment through potentially avoidable complications. Similarly, fragmentation may reinforce an oversight culture because no single health/common care provider is responsible for ensuring coordination, follow-up, and

management of care plans. In such a complex and fragmented environment, new interventions and best practices can prove difficult to implement. There exist strong individual, organizational, and systemic barriers making it challenging to adopt, scale up, and sustain successful pilot programs, medicines, devices, and outcomes shown. Successful strategies must effectively navigate these barriers. This involves ongoing dialogue with the licensing community and promoting an understanding of these challenges. It can also entail leading or supporting governance adoption, dissemination, and advocacy efforts of new techniques, standards, and programs, as well as helping improve the required technological and informational infrastructure. All of this must be combined with ongoing evaluation and adaptation of innovation. Cooperation among LMIC healthcare institutions, researchers, and bio-medical engineers is aimed at sharing successful strategies for developing new products, best practices and monitoring the outcomes of children and youth. Broadly, the best approaches for overcoming challenges attempt to provide insights into specific issue areas of most concern. Nascent attempts to replicate successful pediatric care delivery experiments on a broader scale have faced many challenges, and several insights in these new concepts, approaches, and tools have been developed that may better ready them for rapid, scaled, sustainable, and transformative care redesign [27, 28].

Collaboration in Pediatric Care

"I never ask a pediatrician their opinion, I always ask a pediatric pharmacist." This reflects a nationwide issue: misalignment between pediatricians and complex pediatric patients. It has prompted collaboration among pediatric pharmacists and clinical colleagues. While adult specialists in various fields have long recognized the need for Collaborative Practice Agreements (CPAs) for pharmacotherapy optimization, this practice is only just beginning to extend to pediatric patients in transplant and critical care settings. Additionally, in the last 3-4 years, there has been growth in applying decentralized medication management systems to pediatric care, which has shown positive pharmacotherapy outcomes. A significant finding is that pediatric outpatients with ADHD managed by pharmacy-led CPAs are around twice as likely to respond positively compared to those not receiving such care. Pediatric cardiac specialties are gaining global recognition, driven by technological advancements, increasing knowledge, and better interdisciplinary collaboration in resource-rich countries. Effective teamwork among cardiologists, surgeons, intensivists, and referring professionals is crucial for delivering coordinated care, which is essential for patients and families regardless of their socio-economic status. Trust and mutual respect among team members are vital; inter-team conflicts can harm patient care, underscoring the importance of professional collaboration to ensure the best outcomes [29, 30].

CONCLUSION

Innovations in pediatric care have made significant strides in improving children's health outcomes, offering new diagnostic, treatment, and preventive strategies. The integration of technology, personalized medicine, and holistic care models has enhanced the quality and accessibility of healthcare for children. However, disparities in healthcare access, the need for pediatric-specific medical equipment, and ethical concerns must be addressed to ensure equitable and effective care. Future efforts should focus on interdisciplinary collaboration, AI-driven healthcare solutions, and a patient- and family-centered approach to pediatric medicine. By continuing to refine and implement these innovations, the healthcare system can better support children's health needs and ensure optimal development throughout their lifespan.

REFERENCES

1. Scopetti M, Santurro A, Gatto V, Padovano M, Manetti F, D'Errico S, Fineschi V. Information, sharing, and self-determination: understanding the current challenges for the improvement of pediatric care pathways. Frontiers in Pediatrics. 2020 Jul 8;8:371.
2. Faris GW, Marcin JP, Weinstein E. The current state of the pediatric emergency medicine workforce and innovations to improve pediatric care. Clinical Pediatric Emergency Medicine. 2018 Sep 1;19(3):272-81.
3. LeBlanc JC. Bullying: It's not just a school problem. Paediatrics & Child Health. 2001 Sep 1;6(7):411-3.
4. McDonald P. The costs of children: a review of methods and results. Family Matters (Melbourne, Vic.). 1990 Nov 1(27):18-22.

5. Badawy SM, Radovic A. Digital approaches to remote pediatric health care delivery during the COVID-19 pandemic: existing evidence and a call for further research. JMIR pediatrics and parenting. 2020 Jun 25;3(1):e20049.
6. Singh S, Bhatt P, Sharma SK, Rabiu S. Digital transformation in healthcare: Innovation and technologies. InBlockchain for Healthcare Systems 2021 Sep 21 (pp. 61-79). CRC Press. [HTML]
7. Puri S, Shaheen M, Grover B. Nutrition and cognitive health: A life course approach. Frontiers in public health. 2023 Mar 27;11:1023907.
8. Squires JE, Alonso EM, Ibrahim SH, Kasper V, Kehar M, Martinez M, Squires RH. North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition position paper on the diagnosis and management of pediatric acute liver failure. Journal of pediatric gastroenterology and nutrition. 2022 Jan 1;74(1):138-58. naspghan.org
9. Listernick ZI, Badawy SM. Mental health implications of the COVID-19 pandemic among children and adolescents: What do we know so far?. Pediatric Health, Medicine and Therapeutics. 2021 Dec 20:543-9.
10. Davide M. Treating adolescent anxiety and depression in primary care considering pandemic mental health fallout. Advances in Family Practice Nursing. 2022 May 6;4(1):187.
11. Olusanya BO, Kancherla V, Shaheen A, Ogbo FA, Davis AC. Global and regional prevalence of disabilities among children and adolescents: analysis of findings from global health databases. Frontiers in public health. 2022 Sep 23;10:977453. frontiersin.org
12. Francés L, Quintero J, Fernández A, Ruiz A, Caules J, Fillon G, Hervás A, Soler CV. Current state of knowledge on the prevalence of neurodevelopmental disorders in childhood according to the DSM-5: a systematic review in accordance with the PRISMA criteria. Child and adolescent psychiatry and mental health. 2022 Mar 31;16(1):27. springer.com
13. Macias-Konstantopoulos WL, Collins KA, Diaz R, Duber HC, Edwards CD, Hsu AP, Ranney ML, Riviello RJ, Wettstein ZS, Sachs CJ. Race, healthcare, and health disparities: a critical review and recommendations for advancing health equity. Western journal of emergency medicine. 2023 Aug 8;24(5):906. nih.gov
14. Leonard JC, Josephson CD, Luther JF, Wisniewski SR, Allen C, Chiusolo F, Davis AL, Finkelstein RA, Fitzgerald JC, Gaines BA, Goobie SM. Life-threatening bleeding in children: a prospective observational study. Critical care medicine. 2021 Nov 1;49(11):1943-54. nih.gov
15. Jia K, Zhang Y, Jiang M, Cui M, Wang J, Zhang J, Wang H, Zhao H, Li M, Zou Q, Zeng H. Dual-antigen fusion protein vaccination induces protective immunity against Candida albicans infection in mice. Human Vaccines & Immunotherapeutics. 2024 Dec 31;20(1):2406065. tandfonline.com
16. Gupta A, Rudra A, Reed K, Langer R, Anderson DG. Advanced technologies for the development of infectious disease vaccines. Nature Reviews Drug Discovery. 2024 Oct 21:1-25. [HTML]
17. Mestre TD, Lopes MJ, Mestre DM, Ferreira RF, Costa AP, Caldeira EV. Impact of family-centered care in families with children with intellectual disability: A systematic review. Heliyon. 2024 Apr 15;10(7). cell.com
18. Kouo JL, Kouo TS, Gallogly J. Brief report: The experiences of families of children with an autism spectrum disorder when seeking patient-and family-centered care. Journal of Autism and Developmental Disorders. 2022 Sep;52(9):4172-80. [HTML]
19. Davis CM, Apter AJ, Casillas A, Foggs MB, Louisias M, Morris EC, Nanda A, Nelson MR, Ogbogu PU, Walker-McGill CL, Wang J. Health disparities in allergic and immunologic conditions in racial and ethnic underserved populations: a Work Group Report of the AAAAI Committee on the Underserved. Journal of Allergy and Clinical Immunology. 2021 May 1;147(5):1579-93. jacionline.org
20. Hernandez A. Closing the achievement gap in the classroom through culturally relevant pedagogy. Journal of Education and Learning. 2022;11(2):1-21.

21. Fyfe-Johnson AL, Hazlehurst MF, Perrins SP, Bratman GN, Thomas R, Garrett KA, Hafferty KR, Cullaz TM, Marcuse EK, Tandon PS. Nature and children's health: a systematic review. Pediatrics. 2021 Oct 1;148(4). [HTML]
22. Kaimara P, Oikonomou A, Deliyannis I. Could virtual reality applications pose real risks to children and adolescents? A systematic review of ethical issues and concerns. Virtual reality. 2022 Jun;26(2):697-735.
23. Heinrich R, Claus F, Schoenfelder T. Health care costs of home care enzyme replacement therapy for patients with lysosomal storage diseases in Germany. Orphanet Journal of Rare Diseases. 2024 Dec;19(1):1-9.
24. Shortland G, Morrison Z, Spencer M, Elbracht M, Kurth I, Begemann M. Meeting abstracts from the 12th European conference on Rare diseases and Orphan products. Orphanet J Rare Dis. 2024;19(447):10-186. springer.com
25. Ociskova M, Prasko J, Kantor K, Vanek J, Nesnidal V, Belohradova K. Structural Equation Modeling of Childhood Trauma and Self-Stigma in Adult Inpatients with Borderline Personality Disorder. Psychology Research and Behavior Management. 2024 Dec 31:3761-77. tandfonline.com
26. Getz KD, Szymczak JE, Li Y, Madding R, Huang YS, Aftandilian C, Arnold SD, Bona KO, Caywood E, Collier AB, Gramatges MM. Medical outcomes, quality of life, and family perceptions for outpatient vs inpatient neutropenia management after chemotherapy for pediatric acute myeloid leukemia. JAMA network open. 2021 Oct 1;4(10):e2128385-. jamanetwork.com
27. Wasserman RC, Fiks AG. The future (s) of pediatric primary care. Academic Pediatrics. 2021 Apr 1;21(3):414-24.
28. Bhattacharyya O, Shapiro J, Schneider EC. Innovation centers in health care delivery systems: structures for success. Journal of Medical Internet Research. 2022 Feb 10;24(2):e33961. jmir.org
29. Parrish RH, van den Anker J, Benavides S. Where are the Ambulatory Care Pediatric Pharmacists?. Children. 2019 Feb 7;6(2):25.
30. Kumar RK. Teamwork in pediatric heart care. Annals of Pediatric Cardiology. 2009 Jul 1;2(2):140-5.

CITE AS: Nambi Namusisi H. (2025). Innovations in Pediatric Care: Addressing Unique Health Needs. EURASIAN EXPERIMENT JOURNAL OF MEDICINE AND MEDICAL SCIENCES, 6(1):1-9