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Review article

Artificial Intelligence in Pediatrics: Expanding Horizons and Addressing Challenges – A Comprehensive Review

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Abstract:

Background: In this study we aim to explore the transformative potential of Artificial Intelligence (AI) in paediatric healthcare, by focusing on its applications, challenges, and future directions. It seeks to highlight key ethical considerations, knowledge gaps, and recommendations for the responsible integration of AI technologies. **Methods:** A detailed literature search was conducted from March 20-25, 2025, to identify relevant studies, reviews, and case studies related to AI in paediatrics several databases such as PubMed/MEDLINE, Web of Science, Scopus, and Embase. Search terms included combinations of "artificial intelligence," "machine learning," and "paediatrics." Only peer-reviewed articles published in English were included, while studies unrelated to paediatrics or AI, as well as non-peer-reviewed articles, were excluded. **Results:** The analysis reveals that AI has significant potential to enhance early diagnosis and personalize treatment plans for paediatric patients while addressing unique challenges such as developmental variability and communication barriers. However, critical issues such as data privacy, algorithmic bias, and the lack of diverse, high-quality datasets pose challenges to integration. Ethical concerns in areas like mental health assessments also require careful consideration. **Conclusion:** Despite its potential to revolutionize paediatric care, AI technology remains underutilized in this field. To leverage AI effectively, continued research, interdisciplinary collaboration, and a focus on ethical integration are essential to ensure equitable access and improved patient outcomes for children, ultimately positioning AI as a pivotal element in the future of paediatric healthcare.

Keywords
Artificial Intelligence; Paediatrics; Machine Learning; Healthcare Disparities

Introduction

Artificial intelligence (AI) has the potential to revolutionize the healthcare and offering innovative solutions to enhance diagnostics, treatment, and patient outcomes. AI has the potential to address challenges unique to paediatrics, such as developmental variability, communication barriers, and the need for early intervention. From enabling early diagnosis of developmental disorders to creating personalized treatment plans for chronic conditions, AI shall reshape paediatric care delivery. However, integrating AI into healthcare has challenges, including data privacy, algorithmic bias, and lack of high-quality, diverse datasets. Additionally, ethical considerations, particularly in sensitive areas like developmental assessment and mental health screening, require attention ensuring a responsible and equitable use of AI tools [1].

Despite its success in various medical fields, the application of AI is underexplored in children [2]. Key knowledge gaps exist in understanding how AI can seamlessly integrate into clinical workflows, address ethical and legal concerns, and ensure accessibility for underserved populations. Furthermore, there is a need for research on the long-term impact of AI-driven interventions in paediatric care, particularly regarding patient outcomes and healthcare disparities.

This review aims to comprehensively analyse the current applications, challenges, and future directions of AI in paediatric healthcare. By synthesizing existing literature, we seek to highlight AI's transformative potential, identify critical knowledge gaps, and offer recommendations for the responsible and equitable integration of AI into paediatric care.

Methods

A comprehensive literature search was done from 20-25 March 2025 to identify relevant studies, reviews, and case studies on AI in paediatrics included in PubMed/MEDLINE, Scopus, Web of Science, EMBASE, and IEEE Xplore. The search terms included combinations of keywords like "artificial intelligence," AND "machine learning," AND "paediatrics,". Studies published in English were included, focusing on peer-reviewed articles, reviews, and case studies that addressed AI applications in paediatric healthcare. We excluded studies unrelated to paediatrics or AI, non-peer-reviewed articles, editorials, or opinion pieces.

These studies were analyzed to identify key themes, trends, and findings related to AI in paediatrics, focusing on applications, challenges, ethical considerations, and future directions. The findings were synthesized to provide an overview, highlighting the need for continued research and interdisciplinary collaboration to harness the full potential of AI in improving paediatric care.

Results

The chief applications of AI in paediatrics are summarized in **Figure 1.**

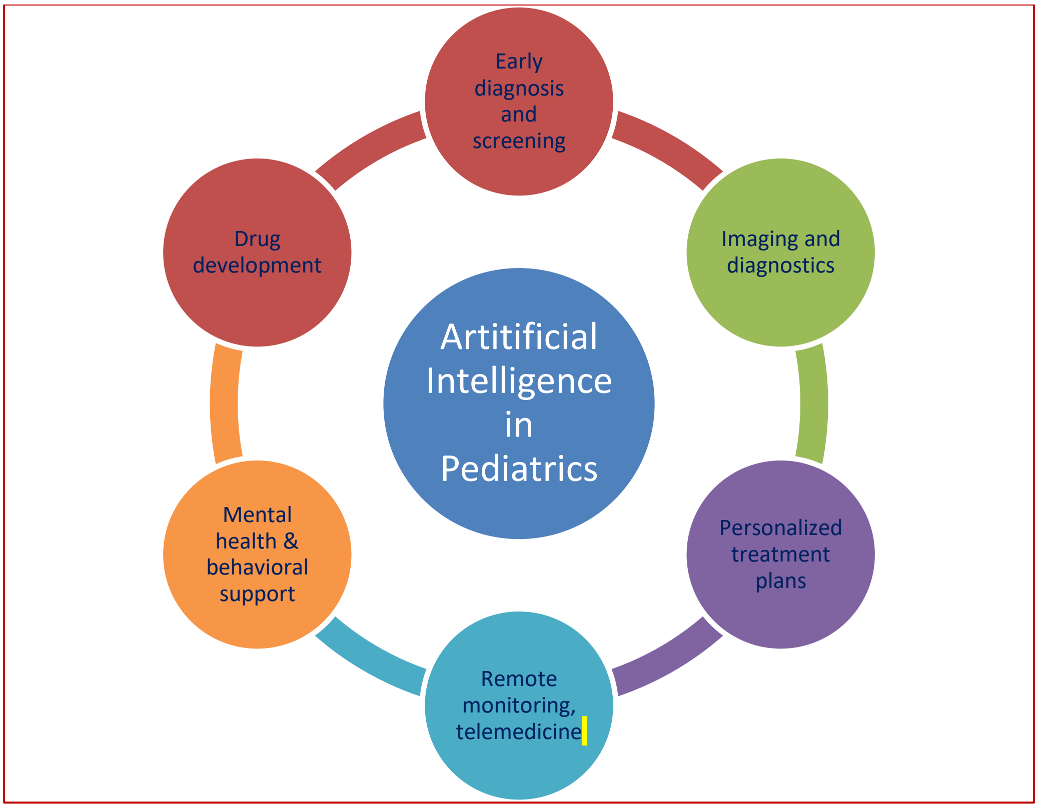

Figure 1: Applications of Artificial Intelligence in Paediatrics.

Early Diagnosis and Screening

AI is revolutionizing early diagnosis and screening in paediatrics, particularly for developmental disorders, genetic conditions, and chronic diseases. AI tools like ChatGPT and Google Gemini (formerly Bard) are particularly useful. A study systematically reviewed the challenges and opportunities of AI in paediatric medicine by analysing 20 relevant articles [3]. It identified three key themes: current AI applications in diagnosing and predicting conditions, challenges in AI deployment like data security, and future opportunities, including big data and precision medicine. The authors emphasized that AI should support, but *not replace*, clinical judgment and empathy [3].

AI may have an important role in preventive care, enabling early detection and intervention for developmental and chronic conditions (**Table 1**). Machine learning (ML) algorithms help analyse data from electronic health records (EHR), clinical photographs, imaging studies, and wearable devices to identify patterns indicative of conditions like autism spectrum disorder, craniosynostosis, malignancies, or congenital heart defects. A study developed an ML model to predict autism spectrum disorder in infants using EHR from a national screening program [4]. Analysing data from over 780,000 children, including 1163 with autism spectrum disorder, the model achieved an accuracy of 0.86. The study suggests that ML algorithms on preventive care records may aid in screening for autism spectrum disorders [4].

AI-powered tools help analyse facial expressions, speech patterns, or motor skills to detect early signs of developmental delays and enable timely intervention and improved outcomes. AI is being integrated more into digital medicine for mental health practice and research. A review highlighted the synergy between AI and mental healthcare, emphasizing the need for collaboration among experts to ensure validity, account for unobserved factors, assess bias, and mitigate AI errors [5] .

In neonatal care, AI interprets data from monitors in neonatal intensive care units, e.g., predicting complications such as sepsis or respiratory distress syndrome. AI, including ML and deep learning, is being used in various areas: neurocritical care (seizure detection, grading of brain injury), assessment of brain development and neurodevelopment outcomes, prediction of pulmonary disorders and readiness for extubation, detection of retinopathy of prematurity, and screening for sepsis, patent ductus arteriosus and jaundice. Further research, including clinical trials and ethical considerations, is needed to validate AI models in neonatology [6].

AI-powered wearable devices provide real-time monitoring of vital signs and symptoms, enabling timely adjustments to treatment plans [7].

Imaging and Diagnostics

AI is enhancing the accuracy and efficiency of paediatric imaging, which is challenging due to the smaller size and ongoing physical development. Deep learning algorithms can analyse X-rays, MRI, and ultrasounds to detect abnormalities, improving efficiency and reducing healthcare costs. AI-aided kidney ultrasound holds promise in predicting and differentiating chronic kidney disease from acute injury and in objective evaluation of hydro (uretero) nephrosis. Paediatric radiologists will be vital in evaluating and implementing AI tools [8].

Moreover, AI can assist in non-invasive diagnostics, such as analysing retinal images for signs of retinopathy of prematurity (ROP) or AI-driven echocardiography to assess heart function in congenital heart disease [9]. The diagnosis and grading of retinopathy of prematurity have undergone significant changes with the application of deep learning algorithms. The next challenge is to ensure that these algorithms are generalizable and robust in a real-world setting, requiring standardizing data acquisition, external validation, and demonstration of their feasibility. However, technical, ethical, clinical, regulatory, and financial considerations need addressing to bring AI technology to clinical care [10].

AI in Paediatric Subspecialties

AI is making significant strides across various paediatric subspecialties (**Table 2**), addressing the unique challenges posed by children's developmental stages and health conditions. The role of AI in predicting neonatal outcomes and neurodevelopmental delays has been discussed above [11]. AI revolutionizes cancer care by early diagnosis, predicting treatment responses, identifying high-risk patients, and personalizing chemotherapy regimens. AI algorithms can analyse imaging data to detect tumours and monitor treatment progress [12]. AI-driven tools also enhance the early diagnosis and management of congenital heart defects. Non-invasive methods, such as AI-powered echocardiography, are being used to assess heart function in children, to reduce the requirement for invasive procedures [13]. In paediatric neurology, AI is applied to detect seizures, assess brain injuries, and predict neurodevelopmental outcomes in children with neurological disorders. These applications have the potential to improve early diagnosis and intervention, particularly in conditions like epilepsy and cerebral palsy [14]]. Similarly, AI can enable the timely detection of acute kidney injury, guide drug dosing, allow precise histological diagnosis, and potentially predict the progression of kidney disease [15]. Data suggest that AI may help choose the best dialysis modality and identify markers to indicate the maturation of the arteriovenous fistula or peritoneal dialysis membrane. AI algorithms may identify patients at risk of intradialytic hypotension or cardiovascular events using datasets available from dialysis centers. Ensuring data anonymization, valid consent, representation across ethnicities, and adherence to regulatory frameworks remains crucial.

Table 1: Artificial intelligence (AI) in preventive care and early intervention.

Area	**AI applications**	**Examples**
Developmental disorders	Early detection of autism spectrum disorder (ASD), speech and motor skill analysis	Machine learning (ML) models to predict ASD using electronic health records (EHR) and behavioural data
Chronic disease management	Real-time monitoring of diabetes, asthma, epilepsy, progression of kidney disease	Wearable devices with AI for continuous health monitoring
Mental health	Early detection of anxiety, depression, and self-harm tendencies	AI chatbots for mental health screening and cognitive behavioural therapy

Table 2: Applications of artificial intelligence (AI) in paediatric subspecialties.

Subspecialty	**AI applications**	**Examples**
Neonatology	Predicting neonatal outcomes, detection of sepsis, monitoring respiratory distress	AI models for early detection of complications
Oncology	Personalized chemotherapy, tumour detection, treatment monitoring	AI-driven imaging for cancer diagnosis and treatment planning
Cardiology	Diagnosis of heart disease, AI-driven echocardiography	Non-invasive cardiac function assessment using AI
Neurology	Detection of seizures, assessing brain injury, predicting neurodevelopmental outcome.	AI for early diagnosis of epilepsy and cerebral palsy
Nephrology	Early diagnosis and prognostic information, personalized therapy	Early detection of acute kidney injury, AI-guided ultrasound diagnosis, predicting progression of kidney disease, predicting adverse events during dialysis, drug dosing

Personalized Treatment Plans

Paediatrics necessitates tailored care due to the significant variability in growth, development, and treatment responses among children. AI can evaluate extensive patient data, including genetic details, to propose personalized treatment strategies. The integration of AI with precision medicine holds the promise to revolutionize healthcare. Precision medicine focuses on identifying patients who exhibit atypical treatment responses or possess unique requirements, while AI offers sophisticated computation and learning capabilities to enhance clinical decision-making. Research investigating this synergy is anticipated to tackle critical challenges in precision medicine, especially those that involve the amalgamation of genomic and non-genomic factors with patient data (such as symptoms, history, and lifestyle) for customized diagnosis and prognosis [16]. Machine Learning (ML) algorithms have the potential to enhance cancer diagnosis, tailor therapies, and forecast outcomes. These technologies can pinpoint high-risk groups, customize screening processes, and identify patients who are likely to gain from advanced imaging techniques. Furthermore, AI algorithms can also tailor treatment plans and anticipate the effects of genomic variations on therapeutic responses. The current scarcity of large datasets restricts the application of AI in paediatric imaging. However, with sufficient data and processing capabilities, deep learning convolutional neural networks can swiftly analyse vast quantities of data, expediting literature reviews, diagnoses, and personalized treatment options [17].

In the context of chronic conditions, AI-driven tools can scrutinize data from wearable devices and patient-reported symptoms to modify treatment plans in real-time, thereby ensuring optimal disease management. Wearable devices have demonstrated potential in nephrology (predicting adverse events during dialysis, hypertension), cardiology (arrhythmias, rehabilitation), respiratory health (asthma management), neurology (seizure detection, Parkinson's disease), endocrinology (thyroid, infertility, diabetes), orthopaedics (post-surgical recovery), oncology (detection of complications), and mental health (anxiety, posttraumatic stress disorder, stress). Innovations and collaborations in these areas are essential for advancing patient care.

Remote Monitoring and Telemedicine

AI plays a vital role in enhancing access to paediatric healthcare, especially in remote or underserved regions [2]. AI-enabled telemedicine platforms facilitate virtual consultations, allowing paediatricians to oversee and manage patients from a distance. The influence of AI on remote patient monitoring indicates that these models have revolutionized and broadened the scope and advantages of remote healthcare [18]. Wearable devices equipped with AI algorithms can monitor vital signs, activity levels, and various health metrics, notifying caregivers and healthcare professionals of potential concerns before they worsen [19,20].

For children suffering from chronic illnesses, such as epilepsy, diabetes, or kidney disorders, AI-based remote monitoring systems can offer continuous supervision, minimizing the necessity for frequent hospital visits and enhancing the quality of life. AI is reshaping healthcare in numerous domains, including appointment scheduling, clinical decision-making, hospital management, diagnostics, and patient care. It promises greater accuracy, tailored treatments, and improved efficiency. It is essential to balance these benefits with ethical considerations and to ensure fair access. The future of AI in healthcare is promising for personalized medicine, drug development, and responses to global health crises, but achieving this potential necessitates collaboration among all stakeholders [21]. AI technologies can empower patients and their families to engage in decision-making and care management. Digital health applications or AI platforms may enable parents to access their child's health records, track health metrics, and communicate with healthcare providers in real-time.

Mental Health and Behavioural Support

AI is increasingly being employed to tackle the growing incidence of mental health challenges among children and adolescents. AI-driven chatbots and virtual assistants, which utilize natural language processing, are facilitating preliminary mental health assessments and providing cognitive behavioural therapy for issues such as anxiety and depression. Although these technologies do not serve as substitutes for human therapists, they represent a significant advancement in the identification and management of mental health problems [5].

Moreover, AI is being harnessed to scrutinize social media interactions and other digital traces to uncover early indicators of mental health difficulties, including bullying or tendencies toward self-harm. A recent investigation revealed that a multimodal deep learning framework, trained on 996,452 multilingual posts from platforms such as X, Reddit, and Facebook, attained an accuracy rate of 89.3% in recognizing mental health emergencies (e.g., depressive episodes, suicidal thoughts, and anxiety) 7.2 days prior to human specialists. This underscores the promise of AI for prompt intervention, contingent upon the effective resolution of ethical issues such as privacy and cultural biases. Future inquiries should prioritize longitudinal studies, the ethical incorporation of AI into mental health services, and the creation of culturally attuned models to guarantee fair and effective application. The potential of AI in addressing psychiatric disorders, including neurodegenerative diseases, intellectual disabilities, and seizures, is under investigation, particularly concerning awareness, diagnosis, and intervention.

The role of AI in fostering positive emotions and its influence on conditions such as schizophrenia, autism spectrum disorders, and mood disorders is receiving increasing attention [22].

Research and Drug Development

AI is expediting the research and development of treatments for rare paediatric diseases. By analysing genetic information and pinpointing biomarkers, AI is facilitating the emergence of targeted therapies. For instance, AI has played a crucial role in the investigation of congenital disorders of glycosylation, a category of rare diseases, which has led to promising advancements in treatment options [23]. Furthermore, AI can enhance the efficiency of clinical trials by selecting appropriate candidates, forecasting outcomes, and minimizing both the time and expenses associated with drug development [24,25]. Nevertheless, ethical issues, including informed consent and data privacy, must be meticulously considered to guarantee responsible application. Rare diseases, which are frequently overlooked and lack available treatments, stand to gain significantly from AI's capacity to amalgamate various data sources, thereby tackling challenges such as low diagnostic rates and patient dispersion [23].

AI is revolutionizing paediatric research by scrutinizing extensive datasets to uncover patterns, risk factors, and potential treatment options. Machine Learning (ML) plays a pivotal role in diagnostics, prognostics, and personalized therapies for conditions like sepsis, epilepsy, and inflammatory bowel disease [24]. Innovative approaches, such as federated learning and explainable AI (XAI), demonstrate promise in resolving these challenges. However, future investigations must prioritize data diversity, model transparency, and ethical guidelines to ensure fair and effective implementation in paediatric healthcare [24]. Additionally, AI is capable of formulating drug designs specifically for children and predicting necessary dosing requirements [26]. By optimizing drug discovery processes, analysing intricate data, and facilitating virtual trials, AI holds the potential to transform paediatric healthcare. Nonetheless, continuous innovation and regulatory backing are crucial to fully harness its benefits [25].

Ethical, Legal, and Challenges in AI for Paediatrics

The integration of AI in paediatric healthcare presents various ethical and legal dilemmas (**Table 3**). Safeguarding the health data of children is of paramount importance, especially due to their inherent vulnerability, necessitating the implementation of stringent data privacy protocols to avert unauthorized access and the misuse of sensitive information [27]. Moreover, AI algorithms have the potential to reinforce existing biases, which can result in health inequities, particularly among diverse populations. It is crucial to adopt strategies aimed at reducing bias, such as employing diverse datasets and ensuring transparency, to foster equitable health outcomes [28]. Additionally, acquiring informed consent for AI-based interventions in paediatric care poses significant challenges, particularly when involving minors. Ultimately, it is essential for parents and guardians to engage actively in the decision-making process to guarantee that AI applications are utilized in an ethical and responsible manner [27]. These issues highlight the necessity for a thorough examination of ethical principles to uphold trust and safeguard the welfare of paediatric patients.

Comprehensive regulatory frameworks are essential for overseeing the application of AI in paediatric healthcare. Existing regulations need to be revised to tackle the challenges introduced by AI, especially concerning data sharing, algorithm validation, and ethical issues [28]. Establishing international standards and guidelines for AI in paediatrics can guarantee that these technologies are utilized safely and ethically across various regions and healthcare systems [27, 28].

Table 3: Ethical, legal, and practical considerations in artificial intelligence (AI).

Consideration	Challenges	Proposed solutions
Data privacy	Protecting sensitive health data	Robust encryption and data anonymization techniques
Algorithmic bias	Risk of perpetuating health disparities	Use of diverse datasets and transparent AI models
Informed consent	Challenges in obtaining consent for minors	Involving parents/guardians in decision-making processes
Regulatory frameworks	Lack of clear guidelines for AI in paediatrics	Develop global standards and ethical guidelines
Data limitations	Lack of high-quality, diverse paediatric datasets	Encourage data sharing and collaboration across institutions
Ethical concerns	Bias, privacy violations, and lack of transparency	Develop ethical frameworks and ensure human oversight in AI systems
Regulatory gaps	Lack of clear regulations for AI in paediatric care	Establish global standards and guidelines for AI use in healthcare
Implementation barriers	Difficulty integrating AI into clinical workflows	Training for healthcare providers and ensuring AI tools are user-friendly

AI in global health and underserved populations

AI in global health and marginalized communities AI possesses the capability to close gaps in paediatric healthcare, especially in underserved and isolated populations (**Table 4**). AI-enhanced platforms are broadening access to paediatric services in low-resource environments by facilitating remote monitoring and virtual consultations [29,30]. AI-enabled remote monitoring systems can observe vital signs and notify healthcare professionals of potential concerns, enabling prompt intervention for children in distant locations [31,32].

Table 4: Artificial Intelligence (AI) in global health and underserved populations.

Application	AI role	Examples
Telemedicine	Remote monitoring and virtual consultations	AI-powered telemedicine platforms for rural and underserved areas
Global health initiatives	Vaccine distribution, infectious disease management	AI tools for optimizing vaccine delivery and managing diseases like malaria and tuberculosis
Contact tracing in infectious diseases	Targeted vaccine strategies	Targeted vaccines and other preventive strategies during epidemics and pandemics by modeling the spread of the virus
Remote monitoring	Continuous oversight of chronic conditions	AI-driven wearable devices for children with epilepsy or diabetes, early detection, and remote follow-up of retinopathy

Additionally, AI is being integrated into global health initiatives to address paediatric diseases in developing countries [33,34]. The applications suggest how AI can play a transformative role in improving access to healthcare and addressing global health disparities [35,36].

Collaboration and Interdisciplinary Approaches

The successful integration of AI into paediatric care requires collaboration among clinicians, data scientists, ethicists, and policymakers. Interdisciplinary collaborations can lead to innovative AI tools that improve diagnostics, treatment, and patient outcomes. Successful case studies of such projects, such as those involving predictive analytics for neonatal care or personalized treatment plans for chronic conditions, can serve as models for future initiatives [36,37]. Additionally, involving patients and their families in developing and deploying AI tools is critical to ensure that these solutions are patient-centered and meet the needs of children and their caregivers. Engaging families in the design process can help address usability, trust, and ethical considerations, leading to adequate and equitable AI-driven healthcare solutions [33,35].

Economic and Cost-benefit Analysis

AI's economic and cost-benefit analysis highlights its potential to reduce healthcare costs, improve access, and address disparities. AI-driven tools, such as remote monitoring systems, reduce hospital visits and address gaps in healthcare delivery. Increased investment in AI research and targeted trial recruitment, particularly for rare diseases and global health initiatives, has the potential to yield breakthroughs in treatment and improve outcomes for children worldwide. To support these findings, a study by Wolff et al. [38] provides evidence of cost savings and improved healthcare access through AI-driven innovations, underscoring the importance of continued investment in the field.

Discussion

The integration of AI into paediatric healthcare holds transformative potential, promising to revolutionize how we diagnose and treat children. As outlined in our findings, the applications of AI, particularly in early diagnosis and personalized treatment, are substantial. This capability is especially critical in paediatrics, where developmental variability must be accounted for, and timely interventions can significantly alter outcomes for young patients [2].

AI's role in early diagnosis is particularly noteworthy. Technologies leveraging algorithms can analyse vast datasets to identify patterns that may elude human clinicians. For instance, the ability of AI to detect subtle signs of developmental disorders, such as ASD, through behavioural analysis can facilitate earlier interventions, which are crucial for effective treatment. AI systems can utilize various data sources, including electronic health records, genetic information, and even real-time data from wearable devices. These capabilities can enhance screening processes, making them more efficient and accurate. Despite the promise of AI-enabled diagnostics, challenges persist. The complexity of paediatric conditions often requires multidisciplinary input, which can complicate the development of AI models. Furthermore, the variations in developmental stages — particularly in early childhood — can influence diagnostic accuracy, as these systems must adapt to evolving clinical presentations [2].

The ability to create individualized treatment plans is another area where AI can profoundly impact paediatric care. Machine learning algorithms can analyse the effectiveness of various treatments in diverse patient populations, considering factors such as genetic predispositions, co-morbidities, and environmental influences. This tailored approach is pivotal in chronic conditions like asthma or diabetes, where treatment efficacy can vary widely among paediatric patients. Nevertheless, for such personalized approaches to be effective, high-quality, diverse datasets are essential. Current datasets often lack representation across different demographics, which may lead to algorithmic bias and, consequently, disparities in treatment efficacy. Addressing this issue is crucial, not just for improving outcomes but also for ensuring equity in healthcare access [2].

As we navigate the landscape of AI in paediatric healthcare, ethical and legal considerations cannot be overlooked. The sensitive nature of paediatric care introduces unique challenges, particularly regarding data privacy and consent. Parents and guardians must have a clear understanding of how AI tool’s function and the implications of data sharing. Maintaining transparency in AI processes and ensuring that the data is used responsibly is vital [1].

Moreover, the potential for algorithmic bias raises ethical questions about fairness in treatment recommendations. AI systems trained on non-representative datasets may inadvertently reinforce existing healthcare disparities, particularly affecting marginalized communities. Researchers and practitioners must be vigilant and proactive in addressing these biases to ensure equitable healthcare delivery [1].

Limitations

This review has several limitations. First, only studies published in English were included, which may have excluded relevant research in other languages. Second, the focus on peer-reviewed articles may have overlooked valuable insights from grey literature or unpublished studies. These limitations highlight the need for broader inclusion criteria and ongoing updates to ensure a comprehensive understanding of the role of AI in paediatric care.

Future Directions and Recommendations

Future directions regarding the application of AI in paediatrics should focus on improving early diagnosis and creating accurate, personalized, and family-oriented care through sophisticated machine learning algorithms and extensive health data. AI-powered tools can be further optimized to scrutinize intricate datasets, including electronic health records (EHR), imaging, and genetic data, which allows for the detection of patterns and forecasts for conditions such as kidney diseases, developmental disorders, paediatric cancers, and rare genetic disorders. Significant advancements in this field encompass the creation of explainable AI (XAI), which builds trust by producing transparent and interpretable models that both clinicians and patients can comprehend [3]. Furthermore, federated learning can support the training of AI models across various institutions while protecting sensitive information, thus improving data privacy and encouraging collaboration in paediatric research [8]. The integration of precision medicine strategies that merge genomic, environmental, and lifestyle data has the potential to transform treatment strategies for children facing complex or rare conditions. To achieve these advancements in a responsible manner, a unified effort is required to promote interdisciplinary collaboration among clinicians, data scientists, and ethicists. This collaboration will be crucial in tackling ethical issues, such as data privacy and algorithmic bias, and in developing patient-centered AI solutions that address real-world challenges while ensuring the equitable and safe use of AI in paediatric care **(Figure 2).**

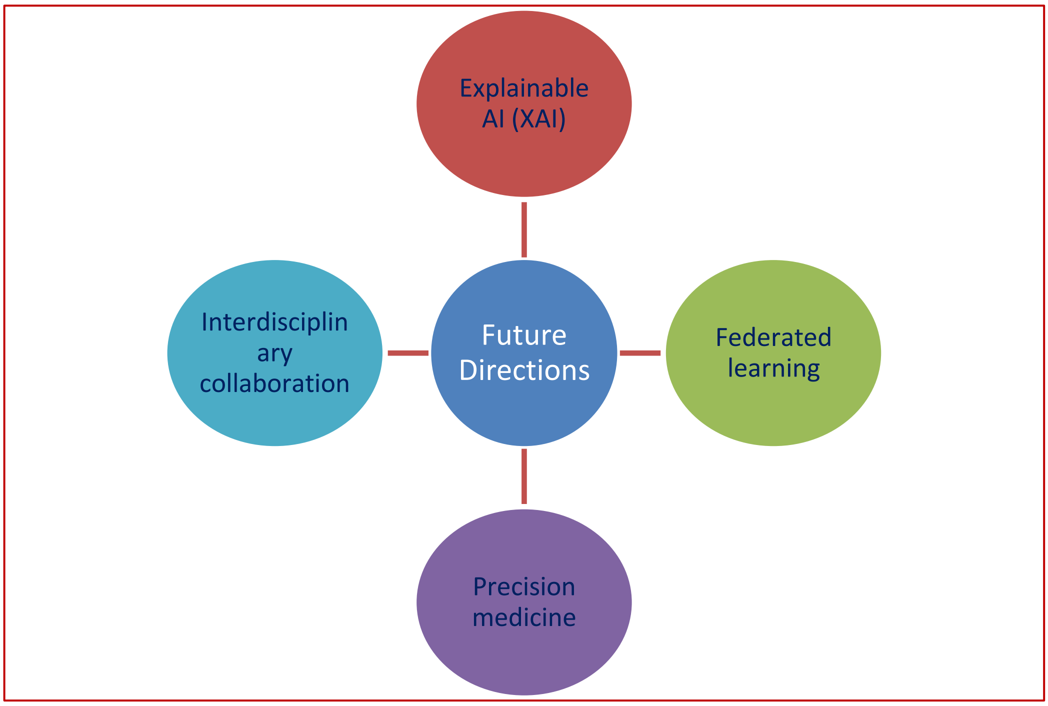

Figure 2: Key Recommendations and Future Directions in Artificial Intelligence for Paediatrics.

Conclusions

AI is poised to revolutionize paediatric care by improving diagnostics, enabling precise, personalized treatments, and expanding access to healthcare. However, careful attention to ethical, legal, and practical considerations is necessary to ensure that AI is used to prioritize the well-being of children and their families. By addressing these challenges and fostering collaboration among stakeholders, the paediatric healthcare community can harness the full potential of AI to improve outcomes for children worldwide.

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