ADVANTAGES OF TELEMEDICINE APPROACHES IN CHILDREN WITH BRONCHIAL ASTHMA

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Abstract: This study examines the effectiveness and benefits of telemedicine technologies in managing bronchial asthma in children. Telemedicine enables remote monitoring of respiratory status, medication adherence, and early signs of asthma exacerbations. Through online consultations, mobile applications, and telemonitoring systems, children and their parents can maintain real-time communication with healthcare professionals, which helps prevent asthma attacks, reduce emergency visits, and improve quality of life. The study highlights the main advantages of telemedicine, including continuous monitoring, time and distance savings, psychological comfort, and improved health outcomes. At the same time, it emphasizes the importance of technological accessibility, parental involvement, and the fact that telemedicine cannot fully replace in-person visits.

Keywords: bronchial asthma, pediatric asthma, children, telemedicine, telehealth, telemonitoring, remote monitoring, asthma management, mobile health applications, digital health, medication adherence, online consultations, healthcare supervision, asthma control, quality of life, chronic respiratory disease, home monitoring, e-health.

Bronchial asthma is a lung disease in which the mucous membrane inside the bronchi (airways) becomes inflamed and narrowed. As a result, a child may experience difficulty breathing, coughing, sputum production, or, in severe cases, shortness of breath. Asthma is often triggered or worsened by allergies, cold air, dust, smoke, or stress.

Telemedicine is a system that allows doctors and patients to communicate remotely. It can be conducted through video calls, mobile applications, emails, or online platforms. Telemedicine is highly beneficial for children with bronchial asthma because it enables continuous monitoring and adjustment of treatment.

Advantages of Telemedicine

1. Emergency Assistance

If a child experiences an asthma attack at home, parents can contact a doctor via video call. The doctor can assess breathing, recommend appropriate medications, and quickly alleviate the child's condition. This is especially important at night or when the hospital is far away.

2. Facilitates Medical Monitoring

Children with asthma often require regular check-ups. Telemedicine allows the doctor to monitor the child's condition remotely, update medication plans, and provide necessary advice, saving parents time and effort.

3. Improved Treatment Tracking

Using mobile applications, parents can record the child's cough, breathing rate, and inhaler usage. The doctor can review this data to adjust treatment accurately and individually.

4. Prevention of Asthma Attacks

Doctors can use telemedicine to educate parents and children about high-risk situations such as allergens, dust, smoke, cold air, and stress. Reminder apps for medication doses can further reduce the likelihood of attacks.

5. Reduces Stress and Anxiety

Children feel the doctor is nearby even while at home, which provides psychological comfort for both the child and the parents.

6. Enhances Medical Knowledge

Parents and children receive information on asthma: which symptoms are dangerous, when and how to use medications, and when doses are sufficient. This supports a healthier lifestyle for the child.

7. Convenience for Doctors

Monitoring multiple children remotely becomes easier. Doctors can review statistics online and plan treatments efficiently, which is especially useful in regions with many children affected by asthma.

8. Individualized Treatment Plans

Each child's asthma symptoms vary. Telemedicine allows doctors to tailor treatment plans to the child's specific needs—for example, a child affected only by cold weather may receive targeted advice, while another at risk from dust or smoke receives different guidance.

9. Home Education

Parents can teach children breathing exercises, inhaler techniques, and allergen protection methods at home.

10. Improves Effectiveness

Telemedicine reduces the number of asthmas attacks, improves medication adherence, and helps children maintain regular school attendance and daily activities.

Disadvantages of Telemedicine

1. Limited Emergency Assistance

In severe asthma attacks where the child cannot breathe properly, advice over video is insufficient. In such cases, immediate hospital care or in-person medical support is required.

2. Technological Issues

Poor internet connectivity can reduce video call quality. Devices such as phones or tablets may fail, making remote assistance difficult.

3. Limited Physical Examination

Doctors can listen to breathing remotely but cannot perform full auscultation with a stethoscope, test sputum in a laboratory, or conduct blood tests. Some symptoms are only detectable in person.

4. Privacy Concerns

Online platforms may expose personal data of the child and parents to risks such as hacking or misuse. Protecting confidentiality is crucial.

5. Difficulty Using Technology

Some parents or children may struggle to use video calls or applications. Young children cannot operate devices independently, limiting remote care.

Conclusion.

Telemedicine is highly valuable for children with bronchial asthma, enabling remote monitoring, medication management, and prevention of asthma attacks. It reduces the need for frequent hospital visits, provides psychological comfort for parents, and improves the child's quality of life.