

## Review Article

### Adolescent Health and Safety: A Comprehensive Review

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#### Abstract:

Adolescents, defined as individuals aged 10–19 years, represent a vital population segment undergoing rapid physical, psychological, and social transformations. This period of transition offers significant opportunities for growth but also presents multifaceted health and safety challenges. Globally, over 1.2 million adolescents die annually from largely preventable causes including accidents, violence, and reproductive health complications. This comprehensive review examines the diverse dimensions of adolescent health and safety, covering physical health, mental well-being, sexual and reproductive health, substance use, violence, and injury prevention. It highlights the influence of social determinants and emerging threats such as digital risks and climate change. The roles of families, communities, health systems, and policy frameworks are discussed as crucial enablers for promoting adolescent health. The article further identifies key challenges such as limited access to adolescent-friendly services, stigma, mental health neglect, and inequities. Future directions emphasize strengthening health systems, expanding mental health support, enhancing health education, empowering youth participation, improving data collection, and fostering multisectoral collaboration. Addressing adolescent health through a holistic, inclusive, and evidence-based approach is essential for securing the well-being of this generation and ensuring sustainable societal development.

**Key words:** Adolescent Health, sexual and reproductive health, Challenges of adolescent health care.

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#### Introduction

Adolescents, comprising individuals aged 10–19 years, represent a critical demographic in public health due to their unique physiological, psychological, and social transitions. Adolescence is a transitional stage marked by rapid physical, cognitive, and emotional development. It offers opportunities for growth but also presents various health and safety challenges. According to the World Health Organization (WHO), over 1.2 million adolescents die every year, mainly from preventable causes such as accidents, violence, and reproductive health complications.<sup>1</sup>

This review explores the multifaceted aspects of adolescent health and safety, encompassing physical and mental health, sexual and reproductive health, substance use, violence, and injury prevention. Understanding and addressing these dimensions are essential for building a healthier future generation. The article also examines the roles of family, community, policy, and health systems in ensuring adolescent well-being. This review also addresses the key components of adolescent health, risk factors, preventive strategies, and the role of stakeholders in promoting adolescent safety.

Adolescence is a pivotal period for physical growth

and development. During this stage—typically between 10 and 19 years of age—the human body undergoes significant biological changes, including puberty, hormonal shifts, and rapid skeletal and muscular growth. These transformations mark adolescence as a critical window for establishing lifelong health behaviors and preventing future disease.

Adolescence, the transitional stage between childhood and adulthood, is a period of profound physical, psychological, emotional, and social development. Defined by the World Health Organization (WHO) as the age range from 10 to 19 years, this life stage is marked by rapid changes that set the foundation for adult health and well-being. While adolescence is often perceived as a time of vitality and opportunity, it is also a phase of increased vulnerability, especially concerning health and safety.<sup>2</sup> Globally, there are approximately 1.3 billion adolescents, making up around 16% of the world's population (UNICEF, 2023).<sup>3</sup>

This demographic represents not just a significant portion of the population but also the future of societies. Ensuring their health and safety is therefore not only a matter of individual well-being but also of national development

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and global sustainability. Despite the importance of this life stage, adolescent health often receives less attention than that of young children or adults. This neglect can have lasting consequences, as the behaviors, exposures, and experiences during adolescence profoundly influence long-term health outcomes.

Adolescents face a range of health and safety challenges that are complex and often interlinked. These include mental health disorders, sexual and reproductive health risks, substance abuse, injuries from accidents and violence, nutritional issues, and exposure to environmental hazards. Emerging threats such as cyberbullying, online addiction, climate change, and the psychological impacts of global crises (like pandemics or conflict) further complicate the landscape of adolescent health. Importantly, many of these issues are preventable or manageable through timely interventions, health education, and supportive environments.<sup>4</sup>

Adolescent health and safety are deeply shaped by social determinants such as poverty, education, gender norms, family dynamics, and access to healthcare. In many low- and middle-income countries, adolescents are particularly at risk due to inadequate health infrastructure, social stigma around adolescent-specific issues (such as menstruation or mental illness), and harmful cultural practices including child marriage and gender-based violence. Even in high-income countries, disparities persist among marginalized and minority groups, reflecting the need for equity-focused approaches.<sup>5</sup>

The concept of adolescent health safety extends beyond physical well-being to include mental, emotional, and social dimensions. It also encompasses the right of adolescents to access accurate information, safe environments, non-judgmental healthcare services, and participation in decisions that affect their lives. In recent years, international frameworks like the WHO's Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) and the Sustainable Development Goals (SDGs) have emphasized the importance of investing in adolescent health as a critical driver of global development.<sup>6</sup>

However, addressing adolescent health and safety requires a multidimensional and multisectoral approach. It involves the collaboration of healthcare systems, educational institutions, policymakers, families, and communities. Health promotion strategies must be age-appropriate, culturally sensitive, and inclusive. Furthermore, adolescents themselves must be empowered to take an active role in shaping health programs and policies that concern them.<sup>7</sup>

## Physical Health of Adolescents

Physical health in adolescents includes nutrition, physical activity, and prevention of communicable and non-communicable diseases. Malnutrition remains prevalent,

with both undernutrition and obesity coexisting, especially in low- and middle-income countries. Vaccine-preventable diseases like HPV and measles still pose threats due to incomplete immunization coverage.<sup>8</sup>

## Growth and Development

Adolescents experience a rapid increase in height, weight, and muscle mass. These changes are driven by hormonal changes, particularly in sex hormones such as estrogen and testosterone. Adequate nutrition is essential during this period to support healthy growth. Stunted growth or delayed puberty may indicate underlying nutritional deficiencies or chronic illness.<sup>9</sup>

## Nutrition

Proper nutrition is essential to support the intense physical growth of adolescence. However, malnutrition remains a concern in many regions. **Undernutrition**, including deficiencies in iron, calcium, and vitamins A and D, can lead to anemia, poor bone health, and weakened immunity. On the other side, **overnutrition**, resulting in overweight and obesity, is also rising globally due to unhealthy diets and sedentary lifestyles. This increases the risk of non-communicable diseases (NCDs) like diabetes and hypertension later in life.<sup>10</sup>

## Physical Activity

Regular physical activity is vital for healthy muscle and bone development, cardiovascular fitness, and weight management. WHO recommends at least 60 minutes of moderate to vigorous physical activity daily for adolescents. However, many adolescents—especially in urban settings—are becoming increasingly sedentary due to screen time and lack of safe recreational spaces.<sup>11</sup>

## Communicable Diseases

Adolescents remain vulnerable to infectious diseases such as tuberculosis, hepatitis, and sexually transmitted infections (STIs), especially if they are not adequately immunized or educated about prevention. Poor hygiene, unsafe sex, and lack of access to healthcare further increase risks.<sup>12,13</sup>

## Non-Communicable Diseases (NCDs)

Although NCDs such as diabetes and cardiovascular diseases are more common in adults, the behaviors that cause them often begin in adolescence. Smoking, poor diet, alcohol use, and physical inactivity are major risk factors. Early intervention can significantly reduce long-term health burdens.<sup>14</sup> Some adolescents live with physical disabilities or chronic illnesses like asthma, epilepsy, or juvenile diabetes. Their needs often go unmet due to stigma, poor access to specialized care, and lack of inclusive school environments.

## Sleep Health

Sleep plays a critical role in physical and cognitive development. Adolescents require 8–10 hours of sleep per night, but academic pressures, screen exposure, and social factors often disrupt sleep patterns. Chronic sleep deprivation can affect immune function, concentration, mood, and physical performance.<sup>15</sup>

## Mental Health of Adolescents

Mental health refers to the emotional, psychological, and social well-being of an individual. In adolescence (ages 10–19), mental health is crucial because it influences thinking, feeling, behavior, and how one handles stress, relationships, and decision-making. Mental health issues often emerge during adolescence. Depression, anxiety, and self-harm are increasingly common. Suicide is the fourth leading cause of death among 15–19-year-olds globally (WHO, 2021).<sup>16</sup>

Risk factors related to mental health of adolescents are peer pressure, academic stress, bullying and cyberbullying, social media addiction etc. School-based mental health programs, accessible psychological counseling and family and peer support systems can minimize the risks and promote mental health among adolescents.<sup>17,18</sup>

Common Mental Health Issues among adolescents are depression (persistent sadness, low energy, loss of interest); Anxiety disorders (excessive worry, restlessness, fear); Stress from academic pressure, peer issues, or family conflict; self-harm and suicidal thoughts. These issues are of increasing concern globally.<sup>19</sup>

## Substance Use and Addiction by Adolescents

Substance use refers to the consumption of harmful or addictive substances such as tobacco, alcohol, or drugs. Addiction is a condition where the person becomes physically or psychologically dependent on these substances. During adolescence (ages 10–19), the brain is still developing, making young people more vulnerable to the harmful effects of substance use.<sup>20</sup> Experimentation with tobacco, alcohol, and drugs often begins during adolescence. Early initiation increases the risk of long-term dependence and adverse health outcomes.<sup>21</sup>

The Causes and Risk Factors for substance use and addiction among the adolescents are peer pressure, curiosity and experimentation, family history of substance use, mental health issues such as anxiety or depression, media influence and glamorization of substance use and Lack of awareness about harmful effects.<sup>22</sup>

## Violence and injury among adolescents

Violence refers to intentional use of physical force or power to harm others, oneself, or property. Injuries can result from both intentional (violence, self-harm) and

unintentional causes (accidents). Adolescents (ages 10–19) are especially vulnerable due to emotional changes, peer influence, and risk-taking behavior. Adolescents face risks of road traffic accidents, domestic violence, and sexual abuse. Boys are more prone to violence-related injuries, while girls are more vulnerable to sexual and intimate partner violence.<sup>23</sup>

Violence Involving Adolescents may of the following types Interpersonal Violence (Fighting, bullying, gang violence, physical, emotional, or sexual abuse by peers or adults), Self-directed Violence (self-harm, suicidal behavior - often linked to depression, abuse, or low self-esteem, Gender-Based Violence includes sexual harassment, forced marriage, or exploitation and girls are often at higher risk, cyberbullying - online harassment, threats, or abuse through social media or messaging apps.<sup>24-26</sup>

## Role of Families and Communities for Positive Impact on Adolescent Health

Adolescents undergo significant physical, emotional, and social changes. During this critical stage of life, families and communities play a central role in shaping the health, safety, and well-being of young people. Their support helps adolescents make healthy choices, build resilience, and develop into responsible adults. Strong family support and positive parenting are protective against many health risks. The families play important role in emotional Support and Communication by providing guidance, Supervision, health education at Home. The seniors of the family may act as role Model for the adolescents. Parents who practice healthy behaviors (e.g., not smoking, managing stress) set a strong example for adolescents. Early Detection of Problems by family members as they are usually the first to notice changes in mood, behavior, or health. Timely support or referral to professionals can prevent long-term issues.<sup>27</sup>

Community engagement enhances awareness and utilization of health services. By creating Safe and supportive environments e.g., safe neighborhoods, parks, and recreational spaces promote physical activity and protect adolescents from violence or abuse.<sup>28</sup>

School and Community Programs like youth clubs, sports programs, and awareness campaigns educate adolescents on health, rights, and responsibilities. These programs build life skills and confidence. Access to adolescent-Friendly Services including health centers, counseling units, and reproductive health services must be accessible, confidential, and welcoming to adolescents. Community leaders can help prevent child marriage, gender-based violence, and drug abuse through education and law enforcement. Cultural and Religious Institutions can promote positive values, life skills, and healthy behaviors when guided by evidence-based practices.<sup>29</sup>

## Role of Policy and Health Systems in Promoting Adolescent Health

National health policies must integrate adolescent-specific components. WHO's Global Accelerated Action for the Health of Adolescents (AA-HA!) framework offers strategic guidance. The key actions of the framework are establishing adolescent health units, training healthcare providers in adolescent care and data collection and monitoring systems.<sup>30</sup>

Health Policy plays role in development of National Adolescent Health Strategies. Examples include WHO's AA-HA! Framework and country-specific adolescent health guidelines. The policy should include legal Protection and Rights - policies that protect adolescents from harmful practices like child marriage, gender-based violence, and child labor and enforce legal age of consent, marriage, and employment. Integration of education and health, gender and equity-focused policies with special attention to marginalized adolescents (e.g., rural, slum-dwelling, disabled, or LGBTQ+ youth) will promote gender equality and eliminate stigma in health service delivery.<sup>31</sup>

## Role of Health Systems

Adolescent-Friendly Health Services (AFHS) can act as the platform which is accessible, confidential, non-judgmental, and respectful to the adolescents. Trained staff to handle adolescent-specific issues like mental health, menstruation, and contraception can effectively and efficiently handle the adolescent health problems. To provide Adolescent-Friendly Health Services (AFHS), capacity building and training of the doctors, nurses, counselors, and teachers are of important in adolescent health needs.<sup>32</sup>

## Challenges in Adolescent Health

Despite growing awareness, adolescent health continues to face numerous challenges worldwide. These challenges are diverse, interlinked, and vary across socio-economic and cultural contexts. Limited Access to Adolescent-Friendly Health Services and lack of health services designed to meet the unique physical and psychological needs of adolescents. Cultural taboos and stigma around sexual and reproductive health, mental illness, and substance use prevent adolescents from seeking help. Gender discrimination limits girls' access to education and healthcare.<sup>33</sup>

Mental health issues like depression, anxiety, and suicide are increasing, yet remain underdiagnosed and undertreated. There is a shortage of trained mental health professionals for adolescents. Increased exposure to tobacco, alcohol, drugs, and early sexual activity, Peer pressure and lack of life skills contribute to risky behavior.<sup>34</sup>

Excessive screen time, cyberbullying, internet addiction, and exposure to harmful content negatively impact

mental and social well-being. Lack of digital literacy and parental guidance in safe internet use. Malnutrition (both undernutrition and obesity) is prevalent. Unhealthy eating habits, sedentary lifestyle, and early signs of non-communicable diseases are growing concerns. Many countries have adolescent health policies but face challenges in implementation due to weak systems, lack of funding, and intersectoral gaps.<sup>35</sup>

## Future Directions for Improving Adolescent Health

To ensure better health outcomes for adolescents, a coordinated and proactive approach is essential. The following future directions should guide planning and policy. Establish dedicated, youth-friendly health clinics with trained staff.<sup>36</sup> Ensure privacy, respect, and accessibility for adolescents. Integrate mental health into primary care and school health programs.<sup>37</sup> Train teachers and community workers to identify and support at-risk youth. Promotion of school-based health education focusing on life skills, nutrition, sexual and reproductive health, and mental well-being. Use peer education and digital platforms for wider outreach.<sup>38</sup>

Adolescent's involvement in planning, implementing, and evaluating health programs. Promote youth leadership, peer counseling, and community engagement. Investing in adolescent-specific research and health data to inform evidence-based policies, disaggregate data by age, gender, and location to identify vulnerable groups are the cornerstone of managing adolescent health behaviour. Focusing on reaching vulnerable groups such as girls, LGBTQ+ adolescents, refugees, and those with disabilities. Ensure equitable access to health, education, and protection services cannot be neglected. Collaboration and integration between health, education, social welfare, justice, and youth sectors is of utmost importance.<sup>39</sup>

## Adolescent Health Services and Policies in Bangladesh

Adolescents (aged 10–19 years) comprise approximately 36 million people, or around 21% of the total population in Bangladesh.<sup>40</sup> The National Adolescent Health Strategy 2017–2030 addresses key areas including nutrition, SRH, mental health, and prevention of violence.<sup>7</sup> Adolescent-Friendly Health Services (AFHS) have been established at selected Upazila Health Complexes, providing confidential and youth-sensitive care (DGHS, 2021).<sup>41</sup> NGOs such as BRAC, Save the Children, and Plan International work in advocacy, awareness, and service delivery.

## Challenges

Deep-rooted cultural taboos surrounding SRH and mental health are the main challenges to implement effective adolescent friendly health service in



Bangladesh. Inadequate coverage and quality of AFHS further worsen the scenario. Weak coordination among health, education, and social sectors as well as poor data and surveillance on adolescent health indicators.

### Conclusion:

Adolescent health and safety require a comprehensive, multi-sectoral approach that includes health services, education, policy, and community involvement. Investing in adolescent health not only saves lives but also yields long-term social and economic benefits. Bottom of Form

Maintaining physical health and mental during adolescence is vital for ensuring optimal development and laying the foundation for a healthy adult life. Interventions should be proactive, culturally sensitive, and holistic—addressing nutrition, exercise, disease prevention, and access to adolescent-friendly health services. A supportive environment involving family, schools, healthcare systems, and policy frameworks is key to achieving physical health and overall well-being in adolescents.

Promoting adolescent sexual and reproductive health is essential for ensuring their overall well-being, rights, and future opportunities. Education, access to health services, and a supportive environment help adolescents make safe, informed choices about their bodies and relationships. Substance use, violence and injury during adolescence are serious public health concern. Early prevention, education, supportive families, and strong legal enforcement are essential to protect adolescents from the dangers of addiction and help them lead healthy, productive lives.

Families and communities are essential pillars in promoting adolescent health. Through love, education, protection, and empowerment, they help adolescents grow into healthy, capable, and responsible individuals. A collaborative and supportive approach ensures a brighter future for the next generation. Effective policies and responsive health systems are essential to safeguard and improve adolescent health. Governments must invest in adolescent health through legal reforms, program development, trained personnel, and inclusive health services. A strategic and collaborative approach ensures that adolescents grow into healthy, empowered adults who can contribute positively to society.

Adolescent health is at a crossroads—rich with opportunities but also challenged by rapid social, environmental, and technological changes. To build a healthier future generation, investments must go beyond treating illness to promoting holistic well-being. Empowering adolescents, strengthening systems, and creating supportive environments are key to transforming adolescent health from a challenge into a global achievement.

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