

## Article

# Effect of Adolescent Health Policies on Health Outcomes in India

Sayooj Sahadevan, Maureen Dar Iang and Fekri Dureab \* 

Heidelberg Institute for Global Health, University Hospital, Heidelberg University, 69120 Heidelberg, Germany; sayooj1091@gmail.com (S.S.); maureen.dar\_iang@uni-heidelberg.de (M.D.I.)

\* Correspondence: fekri.dureab@uni-heidelberg.de

**Abstract:** Adolescence is a crucial phase marked by significant physical, psychological, emotional, and social changes. India has the world's largest adolescent population. Understanding and addressing their health needs is vital for the nation's social, political, and economic progress. The primary aim of this study was to evaluate the main adolescent health policies and strategies implemented from 2006 to 2020 and analyze the outcomes for adolescent health in India. To achieve this objective, the research adopted a mixed-method approach, combining qualitative and quantitative analyses of health policies, strategies, and programs implemented since 2005. Additionally, data from the most recent three Demographic Health Surveys (DHSs) were analyzed and compared to assess changes in adolescent health indicators after implementing these policies/strategies. The findings focused on India's major adolescent health policies, namely the Adolescent Reproductive and Sexual Health (ARSH) Strategy 2005, Rashtriya Kishor Swasthya Karyakram (RKSK) 2014, and the School Health Program 2020. All the strategies and programs aim to provide a comprehensive framework for sexual and reproductive health services, expand the scope of adolescent health programming, and address various health aspects. The analysis highlighted strengths in targeted interventions, monitoring, and promotion but weaknesses in awareness, societal barriers, and healthcare worker participation. Opportunities include female-friendly clinics and education about early pregnancy, while addressing substance abuse and training volunteers remain challenges. Family planning has improved with higher contraception usage and a decline in unmet needs. The incidence of violence decreased, and positive health behaviors increased, such as condom use. However, challenges remain, including limited access to health services, concerns about female providers, and low health insurance coverage. Nutrition indicators showed a slight increase in overweight/obesity and anemia rates. In conclusion, progress has been made, but certain adolescent health aspects still require attention. Further efforts are needed to achieve universal health coverage and improve adolescent health outcomes. Conducting targeted awareness campaigns, strengthening health worker and NGO engagement, and combating the increasing prevalence of overweight and obesity among adolescents are recommended.



**Citation:** Sahadevan, S.; Dar Iang, M.; Dureab, F. Effect of Adolescent Health Policies on Health Outcomes in India. *Adolescents* **2023**, *3*, 613–624. <https://doi.org/10.3390/adolescents3040043>

Academic Editor: Dan Romer

Received: 8 July 2023

Revised: 15 September 2023

Accepted: 27 September 2023

Published: 7 October 2023

**Keywords:** India adolescent health; health policy and health strategy



**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Adolescence is a critical phase of life marked by significant physical, psychological, emotional, and social changes. The WHO defines any individual between the ages of 10 and 19 as an adolescent [1]. Although these definitions point chronologically to the teenage years of an individual, the cultural and social experiences associated with this phase may start earlier or later. Physical, emotional, social, and intellectual developments can be used to classify adolescence into the following three categories: early adolescence (ages 11–14), mid adolescence (ages 15–17), and late adolescence (ages 18–21) [2].

Historically, health policies prioritized maternal, child, and reproductive health, leaving adolescents primarily overlooked. However, recent policy changes have addressed this gap, including adolescents previously excluded from the country's policies and strategies.

Due to the distinct nature of crimes, health issues, and emotional and physical needs affecting this age group, there has been a growing recognition of the necessity for their representation as a separate demographic. Consequently, there has been an increasing demand for the formulation of distinct policies tailored to address the specific needs of adolescents [3].

The importance of addressing adolescent healthcare has garnered recognition from the United Nations, leading to collaborations with several countries to address this concern. A significant development in this occurred in 1987, when the International Association for Adolescent Health (IAAH), a multifaceted non-governmental organization, was established to meet the healthcare needs of adolescents worldwide. The IAAH has been actively involved in various initiatives, including organizing health camps, offering scholarships through sponsorships, and undertaking diverse endeavors to support the well-being of adolescents [4].

India holds the world's largest adolescent population of approximately 253 million, and one in five citizens is between the ages of 10 and 19. India will benefit socially, politically, and economically if this enormous population of teenagers is secure, healthy, educated, and provided with knowledge and life skills to support the nation's future development [5,6]. In recent years, the health and well-being of adolescents have emerged as priorities for policymakers and public health professionals worldwide. India, with its large and diverse population of adolescents, is no exception to this global concern. As a result, various policies have been formulated and implemented to address the specific health needs of this age group. Policymakers need to include the adolescent population in policy considerations. Adolescents undergo periods of stress and heightened emotions, making them particularly susceptible to various health-related issues [7].

Numerous policies have been developed and implemented to address the specific health needs of this age group. However, many adolescents remain unaware of the diseases and threats they are exposed to, leading them to overlook early signs of physical and mental illnesses, often concealing their struggles from their peers and parents. During adolescence, peer pressure and the desire to belong to social groups become pronounced, making young individuals susceptible to developing habits such as addiction and engaging in petty crimes [8]. To understand the challenges faced by adolescent girls, a noteworthy study was conducted in Uttar Pradesh and Bihar. The research revealed that girls forced into child marriages encountered depression and domestic violence and were compelled to drop out of schools and colleges. Unplanned pregnancies were also prevalent, exacerbating their already difficult situations. Moreover, the study highlighted an alarming increase in suicide rates and suicide attempts among adolescents [8].

Additionally, there was another study carried out in India that specifically investigated the prevalence of anemia among children and adolescents. The research revealed that while iron deficiency anemia was the most common type, there were also widespread cases of anemia caused by other factors, such as deficiencies in vitamin B12 and folic acid, among adolescents, indicating inadequate dietary choices or insufficient access to nutritious food within families across the country [9].

Countries have shown that policies and programs focusing on adolescents' health can have a profound impact on adolescents' health and well-being. Both access to healthcare centers and awareness about the necessity of specific health policies tailored to adolescents pose significant challenges [10]. Therefore, the objective of this study is to assess the key adolescent health policies and strategies that were implemented during the period from 2006 to 2020 and analyze the outcomes.

## 2. Methods

The mixed-method approach used in this study combined qualitative and quantitative data analyses to gain a comprehensive understanding of the topic under investigation—adolescent health in India. By combining both qualitative and quantitative data analyses, the study can provide a more comprehensive and robust understanding of adolescent health in India.

The qualitative analysis offered insights into the policy landscape and the state of research in the field. The quantitative analysis enabled the assessment of tangible outcomes and impacts of the government's health policies on adolescent health indicators. The study has the following two main components: a qualitative data analysis and a quantitative data analysis.

### 2.1. Study Areas

The study area included the entire territory of India, located in the southwestern section of the Asian continent. The nation has a total land area of 3,287,263 square kilometers [11].

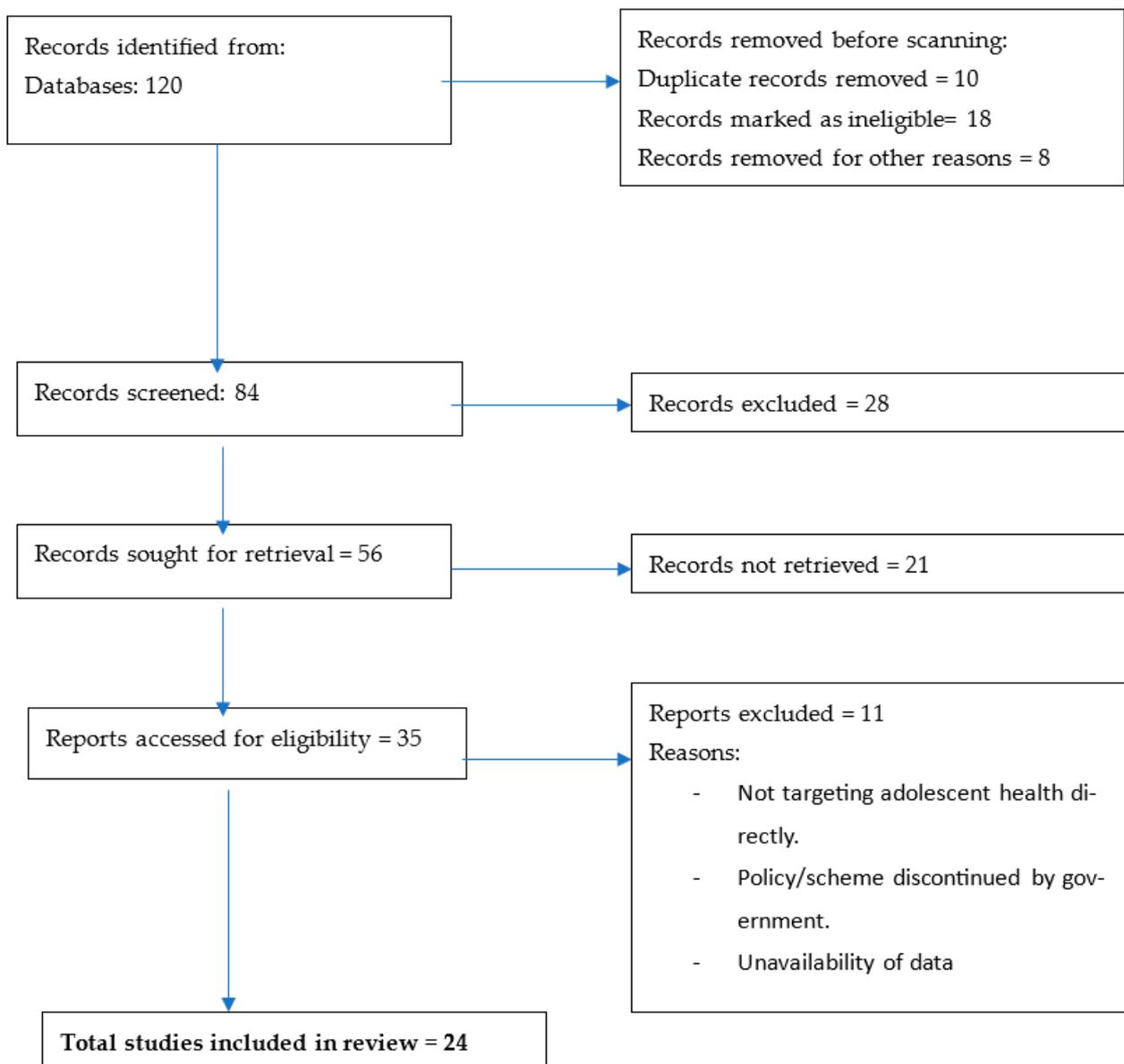
### 2.2. Qualitative Data Analysis

The qualitative data analysis focused on examining official documents of the Indian government, specifically strategies, policies, and program reports related to adolescent health from 2005 to 2020. By analyzing these documents, the researchers aimed to gain insights into the various initiatives and approaches taken by the government to address adolescent health issues during this period. This qualitative analysis helped to understand the policy context and the intent behind the programs implemented. In total, nine official documents were reviewed, and this section analyzed three key policies chosen for their nationwide coverage in India and their focus on the adolescent population. The purpose was to assess the progress made and observe the changes that have taken place.

In addition to the official documents, the study also involved reviewing scientific published papers on adolescent health in India using PubMed, Google Scholar, the Research Gate website, and UN agency websites. The following keywords were used to screen publications and journals and access government public access websites: "National health policy", "Adolescent health coverage", "Health service delivery", "Health security", "Health promotion", "Adolescent Girls in India", "National strategies", "Ministry of Health, India", "India DHS", and so on. This literature review contributes to the qualitative aspect of the study, allowing researchers to gather existing knowledge, research findings, and expert opinions on the topic using an SWOT analysis (strengths, weaknesses, opportunities, and threats) [12]. Qualitative data from both official documents and scientific papers were used to identify patterns related to adolescent health in India. A total of 24 documents were reviewed. The following flow diagram (Figure 1) shows the identified, screened, and reviewed documents for the SWOT analysis.

### 2.3. Quantitative Data Analysis

The quantitative data analysis in this study utilizes Demographic Health Survey (DHS) data collected from 2005 to 2021. DHS is a large-scale survey that provides nationally representative information on various health and demographic indicators. In this study, the DHS data were used to measure the progress and impact of health policies on adolescent health over the years. By employing quantitative data analysis techniques on the DHS data, researchers can assess changes in key indicators of adolescent health, such as prevalence rates of certain diseases, access to healthcare services, health behaviors, and socio-demographic factors. Comparing data across different time points allows us to identify outcomes and assess the effectiveness of health policies and interventions targeted at adolescents.



**Figure 1.** Literature review flow diagram for SWOT analysis.

### 3. Results

A total of nine policies/strategies/programs focusing on adolescent health between 2005 and 2020 were screened and reviewed (Table 1). The following section presents an analysis of three prominent policies that were selected based on their nationwide scope, targeting the adolescent population, and their alignment with the period of the Demographic Health Survey (DHS). The objective was to assess the changes in adolescents' health indicators that have occurred from 2005 to 2020.

**Table 1.** Policies/strategies/programs focusing on adolescent health between 2005 and 2020.

Policy/Scheme	Year	Coverage	Source
Adolescent Reproductive and Sexual Health (ARSH) Strategy	2005	Introduced in New Delhi and later implemented in all states	MoHFW *
Kishori Shakti Yojana	2007	Odisha	MWCD **
National Adolescent Health Strategy	2014	New Delhi	UNFPA ***

Table 1. Cont.

Policy/Scheme	Year	Coverage	Source
National Adolescent Health Program Rashtriya Kishor Swasthya Karyakram (RKSK)	2014	All states of India	MoHFW *
Beti Bachao Beti Padhao Yojana	2015	Uttar Pradesh, Haryana, Uttarakhand, Punjab, Bihar and Delhi	MWCD **
Rajiv Gandhi Scheme for Empowerment of Adolescent Girls	2017	200 selected districts in India	MWCD **
National Policy for Rare Diseases	2017	All states of India	MoHFW *
Poshan Scheme for Holistic Nourishment	2018	Rajasthan	MWCD **
School Health Program	2020	Government schools in all districts	MoHFW *

\* (MoHFW) Ministry of Health and Family Welfare, India; \*\* (MWCD) Ministry of women and child development; \*\*\* (UNFPA) United Nations Population Fund.

1. Adolescent Reproductive and Sexual Health Strategy (2005). This strategy aims to provide a comprehensive framework for offering various sexual and reproductive health services to adolescents. It encompasses a core package of services, including preventive, promotive, curative, and counseling services to cater to the specific needs of this age group.
2. Rashtriya Kishor Swasthya Karyakram (RKSK) 2014. This strategy, called the National Adolescent Health Program, has significantly expanded the scope of adolescent health programming in India. It no longer confines itself solely to sexual and reproductive health but includes nutrition, injuries and violence (including gender-based violence), non-communicable diseases, mental health, and substance misuse. The strength of this program lies in its health-promoting approach, shifting from clinic-based services to prevention and promotion, reaching adolescents in their own environments, such as schools, families, and communities.
3. School Health Program 2020. The objectives of this program are focused on various aspects, including improving nutrition, enhancing vaccination status, sexual and reproductive health, promoting mental health, preventing injuries and violence (including GBV), and addressing substance misuse. Additionally, this program is open to including other relevant topics as determined in consultation with other national stakeholders.

This study reviewed several scientific papers that analyzed health policies implemented between 2005 and 2020. Specifically, the following two prominent policies were selected for analysis due to their national coverage and progressive nature of strategy: the Adolescent Reproductive and Sexual Health Strategy (2005) and the Rashtriya Kishor Swasthya Karyakram (2014). The analysis process applied an SWOT analysis to derive meaningful results.

### 3.1. The Adolescent Reproductive and Sexual Health (ARSH) Strategy 2005

#### Strengths (S):

1. Targeted interventions in schools. The strategy showed effective strategies for providing health interventions specifically tailored to the needs of adolescents within educational settings, which can be crucial in reaching a large number of young individuals.
2. Addressed sexual violence. The policies recognized and addressed the issue of sexual violence among adolescents, indicating a proactive approach toward safeguarding their well-being.
3. Confidential and secure adolescent clinics. Establishing confidential and secure clinics for adolescents indicated efforts to provide a safe and private space for seeking healthcare services, encouraging adolescents to access healthcare without fear of judgment or disclosure.

**Weaknesses (W):**

1. Health service focus and limited focus on awareness. The analysis identified a lack of awareness among adolescents about available health services and resources, which hinders their ability to access necessary care.
2. Not addressing societal barriers. The strategy may not have adequately addressed societal barriers such as cultural norms, stigma, or discrimination that can impede adolescents from seeking healthcare or engaging in preventive behaviors.
3. Not addressing substance abuse. The policies may not have adequately tackled the issue of substance abuse among adolescents, which could have negative implications for their health and well-being.

**Opportunities (O):**

1. Female-friendly clinics. There is potential for the development of clinics that are specifically designed to cater to the needs and preferences of female adolescents, ensuring inclusivity and accessibility of healthcare services for this group.
2. Free nutritional supplements. Providing free nutritional supplements to adolescents can help address nutritional deficiencies, improving overall health and well-being in this age group.
3. Education about early pregnancy. Implementing educational programs focusing on early pregnancy can raise awareness and empower adolescents to make informed decisions about reproductive health.

**Threats (T):**

1. Societal taboos are prevalent and difficult to configure. Deep-rooted societal taboos and norms may pose challenges in designing and implementing effective policies that address sensitive issues related to adolescent health.
2. The scarcity of financial resources poses a significant threat to the successful implementation of strategies and related interventions on a national scale.

**3.2. Rashtriya Kishor Swasthya Karyakram (RKSK) 2014****Strengths (S):**

1. Extensive monitoring and promotion. The policies demonstrate a strong commitment to monitoring and promoting adolescent health, ensuring that the interventions are effectively implemented and reaching the target population.
2. Special training for health workers. The policies recognize the importance of adequately trained healthcare workers who possess the necessary skills to address the unique healthcare needs of adolescents.
3. Additional focus on substance abuse. The policies have placed emphasis on tackling the issue of substance abuse among adolescents, indicating a proactive approach to addressing this significant health concern.

**Weaknesses (W):**

1. Low utilization of clinics, both by adolescents and parents. There may be reluctance among adolescents and their parents to utilize healthcare clinics for reasons such as stigma, lack of awareness, or fear of judgment.
2. Limited NGO involvement. The limited involvement of non-governmental organizations (NGOs) in implementing and supporting the policies could potentially impact the reach and effectiveness of the interventions.
3. Lack of privacy in clinics. Inadequate privacy measures in healthcare clinics may discourage adolescents from seeking healthcare services, particularly for sensitive issues, leading to reduced access to necessary care.

## Opportunities (O):

1. Weekly supplementation scheme. Implementing a weekly supplementation scheme for essential nutrients, along with regular assessment, can improve the overall nutritional status of adolescents, promoting their health and well-being.
2. Counseling for substance abuse, tobacco use, etc. Integrating counseling services as part of the policies can help address substance abuse and tobacco use, providing support and resources for adolescents seeking to overcome these challenges.
3. Special menstrual hygiene scheme. Introducing a dedicated scheme for menstrual hygiene can improve access to menstrual products, education, and support for adolescent girls, positively impacting their health and development.

## Threats (T):

1. Human resources. A shortage of trained healthcare personnel and other human resources may limit the effective implementation and execution of the policies.
2. Logistics supply. Challenges in logistics and supply chain management may hinder the timely delivery of healthcare services, medications, and resources to the target population.
3. Infrastructure. Inadequate healthcare infrastructure, including clinics and facilities, could pose challenges to providing quality healthcare services to adolescents.

Table 2 presents a comparison of various adolescent health indicators for adolescents aged 14 to 19 years across three different DHSs for 2005/2006, 2015/2016, and 2019/2021. Overall, there have been improvements in family planning—the percentage of married women currently using any method of contraception increased from 13% in 2005/2006 to 14.9% in 2015/2016 and significantly rose to 28.1% in 2019/2021. Similarly, the use of modern contraceptive methods among married adolescents increased. The increase in demand for family planning to 40.9% in 2019/2021 and the decline in the unmet need for family planning over the period indicate the success of the programs.

Generally, there was a reduction in violence and positive changes in certain health behaviors. Incidents of sexual violence committed by a husband/partner in the last 12 months decreased from 11.6% in 2005/2006 to 6.1% in 2019/2021. Similarly, physical violence committed by a husband/partner in the last 12 months decreased. The percentage of women married by age 15 declined significantly from 8.2% in 2005/2006 to 1.3% in 2019/2021.

The data showed improvement in knowledge and healthy behavioral practices among adolescents; for instance, condom use at the last higher-risk sexual encounter (with a non-marital, non-cohabiting partner) increased from 33.4% in 2005/2006 to 47.9% in 2015/2016 and further rose to 56.6% in 2019/2021 for male adolescents. Similarly, for girls, condom use at higher-risk encounters increased from 20% in 2005/2006 to 62% in 2019/2021.

**Table 2.** Comparison of health indicators among adolescents aged 14 to 19 years from three DHS datasets in the years 2005/6, 2015/16, and 2019/21.

DHS Indicators	2005/2006 %	2015/2016 %	2019/2021 %
Family planning			
Married adolescents currently using any method of contraception	13	14.9	28.1
Married adolescents currently using any modern method of contraception	6.9	10	18.8
Unmet need for family planning for adolescents	13.9	12.9	9.4
Demand for family planning satisfied by modern methods	7.3	26.9	40.9
Violence			
Sexual violence committed by a husband/partner in the last 12 months	11.6	5.5	6.1
Physical violence committed by a husband/partner in the last 12 months	21.8	16.3	16.4
Women first married by the exact age of 15	8.2	1.9	1.3

Table 2. Cont.

DHS Indicators	2005/2006 %	2015/2016 %	2019/2021 %
Access to health			
Adolescent girls' access to health: Problems obtaining permission to attend treatment	9.3	20.8	16.5
Adolescent girls' access to health: Problems obtaining money for treatment	16.3	26.2	22.4
Adolescent girls' access to health: Problems with distance to health facilities	24.6	31.5	24.2
Adolescent girls' access to health: Problems that there may not be a female provider	21	41.6	34.3
No health insurance—Adolescent girls	No data	83	74.5
No health insurance—Adolescent boys	No data	81.5	73
Behaviors			
Condom use at last higher-risk sex (with a non-marital, non-cohabiting partner) [Adolescent boys]	33.4	47.9	56.6
Condom use at last higher-risk sex (with a non-marital, non-cohabiting partner) [Adolescent girls]	20	35.3	62
Adolescent boys who smoke any type of tobacco	57.3	29.7	34.4
Adolescent girls who smoke any type of tobacco	3.1	1.1	0.8
Nutrition			
Adolescent girls who are overweight or obese according to BMI ( $\geq 25.0$ )	2.4	4.2	5.4
Adolescent boys who are overweight or obese according to BMI ( $\geq 25.0$ )	1.7	4.8	6.6
Adolescent girls with any anemia	55.8	54.1	59.1
Adolescent boys with anemia	30.2	29.2	31.1

However, there are still challenges to accessing health services, especially those related to health insurance coverage. Women who reported fewer problems in obtaining permission to attend treatment increased over time from 9.3% in 2005/2006 to 20.8% in 2015/2016 and slightly decreased again to 16.5% in 2019/2021. The percentage of women aged 14–19 experiencing difficulties obtaining money for treatment increased from 16.3% in 2005/2006 to 26.2% in 2015/2016 and slightly decreased to 22.4% in 2019/2021. Challenges related to the distance of health facilities increased from 24.6% in 2005/2006 to 31.5% in 2015/2016 and slightly decreased again to 24.2% in 2019/2021. Concerns about the lack of female providers at health facilities increased from 21% in 2005/2006 to 41.6% in 2015/2016 and improved to 34.3% in 2019/2021. Generally, the percentage of adolescents without health insurance slightly decreased in 2019/2021 (see Table 2).

Nutrition indicators showed deterioration in the nutritional status of adolescents; the percentage of females who are overweight or obese according to their body mass index (BMI) increased from 2.4% in 2005/2006 to 4.2% in 2015/2016 and further rose to 5.4% in 2019/2021. Similarly, males who are overweight or obese according to their BMI also increased from 1.7% in 2005/2006 to 4.8% in 2015/2016 and further rose to 6.6% in 2019/2021. In 2019/2021, approximately 59% of female adolescents and 31% of male adolescents had some form of anemia.

#### 4. Discussion

The Indian Ministry of Health and Family Welfare has established six strategic priorities for adolescent health, each associated with outcome metrics. These priorities encompass nutrition, sexual and reproductive health, non-communicable diseases, substance abuse, injuries and violence (including gender-based violence), and mental health [13]. The Adolescent Reproductive and Sexual Health Strategy implemented in India in 2005 is the fundamental strategy to pave the road for better interventions targeting the young population. Similar initiatives in southeast Asian countries were developed to address the specific needs of adolescents, including their reproductive and sexual health; for instance, in Bangladesh, Indonesia, and Thailand [14].

The ARSH Strategy initially emphasized the provision of reproductive and sexual health services, offering a comprehensive package that included preventive, promotive, curative, and counseling services through health facilities. This approach primarily revolved around the establishment of adolescent-friendly health clinics. However, in 2014, a new program called RKSK was introduced, aiming to empower all adolescents in India to make informed and responsible decisions regarding their health and well-being. The RKSK program expanded the scope beyond sexual and reproductive health to encompass a broader range of concerns, including non-communicable diseases, nutrition, mental health, substance misuse, and injuries and violence. To effectively deliver these services, the program utilizes both clinic-based and community-based service provision models, complemented by activities to generate demand for these services [15].

Despite the expanded coverage and improved coordination between the central and state governments in implementing RKSK compared to previous policies, certain challenges persist that could potentially become problematic in the future. These challenges include the insufficient participation of non-governmental organizations (NGOs) and inadequate infrastructure [15]. Nevertheless, the primary unresolved issue persists in the population's mindset worldwide. Numerous parents feel uncomfortable with the idea of their children, particularly young girls, attending adolescent clinics. They believe that exposing them to information concerning reproductive and sexual health might corrupt their young minds. Consequently, they withhold all such information from their children. This opposition extends even to sex education at the school level, with many parents expressing their disapproval. Moreover, societal pressure and the fear of bringing dishonor to their families compel numerous women to suffer silently, enduring domestic violence without voicing their plight. The attitudes, beliefs, and norms upheld by parents and the broader community can significantly affect the choices and behaviors of adolescents when it comes to their well-being. Often, adolescents encounter challenges when attempting to make informed decisions about their health due to conflicting viewpoints from their families or societal expectations. This resistance might manifest in discouragement from seeking sexual and reproductive health information, stigmatization of mental health concerns, or even limited access to necessary healthcare services. [16,17]. Hence, involving NGOs and the community in adolescent programs can play a crucial role in fostering community acceptance of sensitive issues concerning adolescent health [14]. For instance, in Pakistan, NGOs, such as Aahung and Rutgers Pakistan, have achieved success by demonstrating their willingness to comprehend the intricate contextual factors within communities. They actively collaborate with various stakeholders, including parents, school officials, religious leaders, media personnel, and adolescents themselves, to garner support and overcome resistance. These organizations employ specific strategies, such as involving communities in content selection, employing tactful approaches to address sensitive issues, engaging influential figures in adolescents' lives, strengthening media presence, showcasing successful school programs to enhance understanding and transparency, and identifying opportune moments to deliver key messages [17]. Moreover, India has made significant strides in promoting adolescent health by integrating it into school programs since 2020, which encompass a wide range of aspects and reach a large student population in the country. However, there is a need for stronger monitoring, particularly in religious schools, as observed in the Indonesian experience [18].

The health indicators for adolescents aged 14 to 19 across three year ranges (2005/2006, 2015/2016, and 2019/2021) can be read from the above table. The analysis reveals improvements in family planning indicators, including increased contraceptive use, decreased unmet needs, and higher satisfaction with modern methods. Comparable trends were observed in Bangladesh and Nepal [19]. Moreover, positive changes have been observed in certain health behaviors and a reduction in violence. Incidents of sexual violence committed by husbands/partners in the last 12 months have decreased recently. Physical violence committed by husbands/partners in the last 12 months also decreased over time. These findings closely align with the global average of 16% for adolescent girls aged 15–19 who

have ever been married or in a partnership and have experienced physical and/or sexual intimate partner violence, which is close to the worldwide average within the past year [20]. Additionally, when comparing India to global trends, it is evident that there has been a noteworthy reduction in the percentage of adolescent girls getting married at the precise age of 15. In India, this figure decreased significantly from 8.2% in 2005/2006 to 1.3% in 2019/2021. Globally, there has also been a 15% decline in the proportion of young women who were married as children. Previously, one in four young women were married before reaching adulthood, but now it stands at approximately one in five [21].

According to the National Non-communicable Disease Monitoring Survey (NNMS) 2017–2018, the prevalence of tobacco use among male adolescents (15–17 years) was 11.9%, while among female adolescents, it was 1.7%. On average, the prevalence of tobacco use among all adolescents was 7% [22]. Comparatively, the Demographic and Health Surveys (DHSs) showed a decrease in tobacco smoking among both male and female adolescents. The prevalence of smoking among males decreased from 57.3% in 2005/2006 to 34.4% in 2019/2021, while among females, it declined from 3.1% in 2005/2006 to 0.8% in 2019/2021. These findings indicate positive changes in the healthy behaviors of adolescents.

The collective global and national efforts toward achieving universal health coverage for adolescents are significantly supported by sustainable development goals and the prevailing global political momentum. Adolescents, who constitute approximately 1.2 billion people, or one in six of the global population, present a crucial demographic. The majority of these adolescents, nearly nine out of ten, reside in low- and middle-income countries (LMICs), where they face challenges accessing healthcare, social services, employment, and sustainable livelihoods. Asia houses over half of the world's adolescent population, with South Asia alone accommodating 344 million adolescents. In certain countries, adolescents comprise as much as a quarter of the overall population, and their numbers are projected to increase until 2050, particularly in low- and middle-income countries. For instance, in India, there is a significant adolescent population that is expected to grow in the coming years [23]. Although there have been positive improvements in various health indicators among adolescents, challenges persist in accessing health services and ensuring adequate health insurance coverage. While the percentage of females facing permission-related obstacles for treatment has decreased over time, poverty remains a concern. Challenges related to distance to health facilities fluctuated, while concerns regarding the lack of female providers showed a slight improvement. Health insurance coverage for both female and male adolescents has improved, yet a significant proportion still lacks coverage. Health insurance coverage for adolescents is limited to less than 20% in most countries, despite notable advancements regarding effective coverage of sexual and reproductive health (SRH) services. However, there is a lack of progress specifically targeting adolescents within these programs, as many national universal health coverage initiatives exclude key SRH services that are vital for this age group [24].

Traditionally, under-nutrition is a major problem; however, the percentage classified as overweight or obese based on their body mass index (BMI) has risen from 2.4% in 2005/2006 to 5.4% in 2019/2021 among females and from 1.7% in 2005/2006 to 6.6% in 2019/2021 among males. A study conducted in 2018 on the prevalence of childhood and adolescent overweight and obesity in Asian countries found that the overall pooled prevalence of obesity in adolescents aged 12–19 years was 8.6%, with 10.1% among boys and 6.2% among girls. The study also reported that the prevalence of overweight in adolescents was 14.6% overall, with 15.9% among boys and 13.7% among girls. The study indicated that a higher percentage of boys were obese and overweight compared to girls among both children and adolescents [25].

The limitations of this study include the absence of real-time information obtained from conducting key informant interviews. This shortfall is due to financial constraints that hindered the investigators from traveling to India for interview purposes. Furthermore, the study faces a limitation in terms of data scarcity concerning adolescents under the age of

14. The prevailing focus of available DHS data primarily centers around adolescents aged 14 to 19 years.

## 5. Conclusions

In conclusion, efforts and progress have been made in India to implement initiatives addressing the health needs of adolescents. However, we require a strategic focus on nutrition, sexual and reproductive health, non-communicable diseases, substance abuse, injuries and violence, and mental health. While progress has been made in certain areas, challenges remain regarding inadequate infrastructure and health insurance coverage for adolescents. Parental and societal resistance play a pivotal role in shaping adolescents' capacity to address their health needs. Engaging NGOs and communities is crucial to fostering acceptance, addressing sensitive issues, and changing societal norms. Undertaking qualitative research to delve deeper into the dynamics of parental and societal resistance that influence adolescents' health-seeking behaviors is highly recommended. Additionally, attention should be given to combating the increasing prevalence of overweight and obesity among adolescents. Further efforts are needed to achieve universal health coverage and improve adolescent health outcomes.

**Author Contributions:** F.D., M.D.I. and S.S. worked on the study's conceptualization and methodology; S.S. wrote the original draft; F.D. and M.D.I. reviewed and edited the manuscript; F.D. and S.S. analyzed and interpreted the data and results; F.D. supervised and approved the final version of the manuscript. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** As the data were anonymous, informed consent was waived.

**Data Availability Statement:** Data is available upon request from the authors.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. WHO. Adolescent Health. 2023. Available online: [https://www.who.int/health-topics/adolescent-health#tab=tab\\_1](https://www.who.int/health-topics/adolescent-health#tab=tab_1) (accessed on 30 May 2023).
2. Sawyer, S.M.; Azzopardi, P.S.; Wickremarathne, D.; Patton, G.C. The age of adolescence. *Lancet Child Adolesc Health* **2018**, *2*, 223–228. [CrossRef] [PubMed]
3. UNICEF. Adolescents: Health Risks and Solutions. 2021. Available online: <https://www.unicef.org/media/60561/file/adolescents-health-risks-solutions-2011.pdf> (accessed on 4 January 2023).
4. IAAH. International Association for Adolescent Health. 2023. Available online: <https://iaah.org/about/> (accessed on 7 April 2023).
5. UNICEF. Empowering Adolescent Girls and Boys in India. 2023. Available online: <https://www.unicef.org/india/what-we-do/adolescent-development-participation> (accessed on 25 May 2023).
6. Collin, P. Youth Civic Engagement: Building Bridges between Youth Practice and Policy. 2021. Available online: <https://www.unicef.org/eap/media/11921/file> (accessed on 7 April 2023).
7. Nandita Babu, M.F. Adolescent Health and Well-Being: Issues, Challenges, and Current Status in India. In *Handbook of Health and Well-Being: Challenges, Strategies and Future Trends*; Springer Nature: Singapore, 2022.
8. Aggarwal, S.; Francis, K.L.; Dashti, S.G.; Patton, G. Child marriage and the mental health of adolescent girls: A longitudinal cohort study from Uttar Pradesh and Bihar, India. *Lancet Reg. Health-Southeast Asia* **2023**, *8*, 100102. [CrossRef] [PubMed]
9. Sarna, A.; Porwal, A.; Ramesh, S.; Agrawal, P.K.; Acharya, R.; Johnston, R.; Khan, N.; Sachdev, H.P.S.; Nair, K.M.; Ramakrishnan, L.; et al. Characterisation of the types of anaemia prevalent among children and adolescents aged 1–19 years in India: A population-based study. *Lancet Child Adolesc. Health* **2020**, *4*, 515–525. [CrossRef]
10. Sivagurunathan, C.; Umadevi, R.; Rama, R.; Gopalakrishnan, S. Adolescent health: Present status and its related programmes in India. Are we in the right direction? *J. Clin. Diagn. Res. JCDR* **2015**, *9*, LE01. [CrossRef]
11. Chakraborty, A.; Joshi, P.; Ghosh, A.; Areendran, G. Assessing biome boundary shifts under climate change scenarios in India. *Ecol. Indic.* **2013**, *34*, 536–547. [CrossRef]
12. Benzaghta, M.A.; Elwalda, A.; Mousa, M.M.; Erkan, I.; Rahman, M. SWOT analysis applications: An integrative literature review. *J. Glob. Bus. Insights* **2021**, *6*, 55–73. [CrossRef]

13. Srivastava, N.M. Adolescent health in India: Need for more interventional research. *Clin. Epidemiol. Glob. Health* **2016**, *4*, 101–102. [CrossRef]
14. WHO. Strategic Directions for Improving Adolescent Health in South-East Asia Region. 2011. Available online: <https://apps.who.int/iris/bitstream/handle/10665/205917/B4771.pdf?sequence=1&isAllowed=y> (accessed on 6 July 2023).
15. Barua, A.; Watson, K.; Plesons, M.; Chandra-Mouli, V.; Sharma, K. Adolescent health programming in India: A rapid review. *Reprod. Health* **2020**, *17*, 87. [CrossRef] [PubMed]
16. Roudsari, R.L.; Javadnoori, M.; Hasanpour, M.; Hazavehei, S.M.M.; Taghipour, A. Socio-cultural challenges to sexual health education for female adolescents in Iran. *Iran. J. Reprod. Med.* **2013**, *11*, 101–110.
17. Munea, A.M.; Alene, G.D.; Debelew, G.T.; Sibhat, K.A. Socio-cultural context of adolescent sexuality and youth friendly service intervention in West Gojjam Zone, Northwest Ethiopia: A qualitative study. *BMC Public Health* **2022**, *22*, 281. [CrossRef] [PubMed]
18. Muthmainnah Nurmala, I.; Siswantara, P.; Rachmayanti, R.D.; Devi, Y.P. Implementation of Adolescent Health Programs at Public Schools and Religion-Based Schools in Indonesia. *J. Public Health Res.* **2021**, *10*, jphr.2021.1954. [CrossRef] [PubMed]
19. USAIDS. The DHS Program STATcompiler. 2023. Available online: <https://www.statcompiler.com/en/> (accessed on 6 July 2023).
20. WHO. Violence against Women Prevalence Estimates, 2018: Global, Regional and National Prevalence Estimates for Intimate Partner Violence against Women and Global and Regional Prevalence Estimates for Non-Partner Sexual Violence against Women. 2021. Available online: <https://apps.who.int/iris/handle/10665/341337> (accessed on 7 July 2023).
21. UNICEF. Child Marriage: Latest Trends and Future Prospects. 2018. Available online: <https://data.unicef.org/resources/child-marriage-latest-trends-and-future-prospects/> (accessed on 7 July 2023).
22. MHFW. National Noncommunicable Disease Monitoring Survey (NNMS) 2017–18. 2018. Available online: [https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/india/india-nnms-2017-18-factsheet.pdf?sfvrsn=a3c7547b\\_1&download=true](https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/india/india-nnms-2017-18-factsheet.pdf?sfvrsn=a3c7547b_1&download=true) (accessed on 7 July 2023).
23. WHO. Adolescent Health: The Missing Population in Universal Health Coverage. 2019. Available online: <https://pmnch.who.int/resources/publications/m/item/adolescent-health{-}-the-missing-population-in-universal-health-coverage> (accessed on 7 July 2023).
24. UNFPA. Universal Health Coverage and Adolescent Sexual and Reproductive Health. My Body is My Body, My Life is My Life: Sexual and Reproductive Health and Rights of Young People in Asia and the Pacific. 2021. Available online: [https://asiapacific.unfpa.org/sites/default/files/pub-pdf/asrh\\_factsheet\\_7\\_uhc.pdf](https://asiapacific.unfpa.org/sites/default/files/pub-pdf/asrh_factsheet_7_uhc.pdf) (accessed on 7 July 2023).
25. Mazidi, M.; Banach, M.; Kengne, A.P.; Lipid and Blood Pressure Meta-analysis Collaboration Group. Prevalence of childhood and adolescent overweight and obesity in Asian countries: A systematic review and meta-analysis. *Arch. Med. Sci.* **2018**, *14*, 1185–1203. [CrossRef] [PubMed]

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.