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Strengthening health systems to reduce adolescent fertility: an analysis of Chile's experience, 2010–2023

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TITLE PAGE

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Declarations

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Consent for Publication

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Availability of Data and Materials

All data used in this study are publicly available and referenced within the manuscript.

Competing Interests

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Title

Strengthening health systems to reduce adolescent fertility: an analysis of Chile's experience, 2010–2023

Abstract

Adolescent pregnancy remains a persistent inequity in Latin America. Chile has achieved one of the fastest declines in adolescent fertility in the region, offering insights into how policy and health system responses may accelerate progress.

Methods. We conducted a national descriptive-analytical case study using a mixed-methods approach to examine policies, programs, and health system transformations implemented in Chile between 2010 and 2023. Data sources included administrative data, repeated cross-sectional surveys, policy documents, and scientific literature. The analysis was guided by frameworks on political prioritization and health system building blocks.

Results. Adolescent fertility among girls aged 15–19 declined from 51.6 births per 1,000 in 2010 to 10.6 in 2023 (−79%). This reduction coincided with sustained political commitment, rights-based health system reforms, and expansion of adolescent-responsive primary care services. Access to contraception—including long-acting methods—increased substantially, alongside improvements in service delivery and health system capacity. Sexual behavior patterns remained relatively stable. Declines occurred alongside persistence and, in some cases, widening socioeconomic inequalities. As a result, marked socioeconomic and territorial inequities in contraceptive uptake persist.

Conclusions Chile's experience suggests that rapid declines in adolescent fertility can occur alongside coordinated, rights-based policies and strengthened health systems,

particularly with expanded access to contraception. However, causal attribution cannot be established.

Plain Language Summary

Adolescent pregnancy is still a major challenge in Latin America and is closely linked to inequality, gender norms, and limited access to education and health services. This study looks at how Chile achieved one of the fastest declines in adolescent pregnancy in the region between 2010 and 2023.

We analyzed national data, policies, and health programs to understand what contributed to this change. During this period, adolescent birth rates dropped by about 79%, from 51.6 to 10.6 births per 1,000 girls aged 15–19. This decline happened alongside strong government commitment, expansion of adolescent-friendly health services, and improved access to contraception, including long-acting methods.

However, not all adolescents benefited equally. Pregnancy rates remain much higher among those living in poverty and in certain regions. Access to services, including abortion, is still unequal, and some adolescents face barriers such as stigma, lack of confidentiality, and limited education about sexual and reproductive health.

The findings show that reducing adolescent pregnancy requires more than health services alone. It also depends on education, social conditions, and policies that support young people's rights and choices. Chile's experience suggests that progress is possible, but continued efforts are needed to reduce inequalities and ensure that all adolescents can access the information and services they need.

Keywords: adolescent fertility, adolescent sexual and reproductive health, adolescent-friendly services, health systems, Chile, political prioritization

Strengthening health systems to reduce adolescent fertility: an analysis of Chile's experience, 2010–2023

BACKGROUND

Adolescent pregnancy remains a critical sexual and reproductive health and rights (SRHR) issue globally and across Latin America, reflecting persistent structural inequalities related to gender, socioeconomic conditions, access to sexuality education, and sexual and reproductive health services. (1,2)

Over the past few decades, a significant body of research has documented the extent, causes, and effects of adolescent fertility in the region. Evidence consistently indicates that, although countries in the Southern Cone—including Chile—have lower adolescent fertility rates than other Latin American nations, decreases in adolescent fertility have lagged behind overall fertility declines. Moreover, adolescent pregnancy remains strongly linked to socioeconomic disadvantage and plays a role in the intergenerational cycle of poverty. In this context, adolescent pregnancy is not only a public health issue but also a matter of rights, equity, and social justice. Despite multiple policy initiatives, earlier efforts were often fragmented or lacked sufficient effectiveness in addressing the structural factors driving early childbearing. (3–7)

At the regional level, adolescent pregnancy has been increasingly framed as a multidimensional issue requiring coordinated, multisectoral responses, within a rights-based and gender-transformative agenda. The Andean Plan for the Prevention of

Adolescent Pregnancy (PLANEA), adopted in 2007, in collaboration with the Pan American Health Organization and the United Nations Population Fund, marked a shift toward recognizing adolescent pregnancy as both a cause and a consequence of structural inequalities, including gender norms, social exclusion, and unequal access to services. PLANEA called for coordinated, multisectoral strategies that integrate health, education, and social protection systems, while emphasizing adolescents' rights to information, autonomy, and access to comprehensive sexuality education and contraception. (8)

In Chile, these commitments were reinforced through national policies, particularly the National Health Strategy 2011–2020 (Estrategia Nacional de Salud, ENS), which explicitly prioritized the reduction of adolescent pregnancy. The ENS set a specific objective of reducing the projected fertility rate among adolescents aged 10–19 years by 10% by 2020, with a target value of 22.5 births per 1,000 adolescents. The strategy established measurable targets and promoted the expansion of sexual and reproductive health services within primary health care, including access to modern contraception and the development of adolescent-friendly services. (9–11)

Together, PLANEA and the National Health Strategy provided an important policy framework that helped guide Chile's progress in addressing the reduction of adolescent pregnancy. Their emphasis on rights-based, intersectoral, and evidence-informed approaches contributed to Chile becoming one of the countries with the lowest adolescent fertility rates in Latin America. National statistics indicate that the adolescent fertility rate among girls aged 15–19 years has declined from 51.6 in 2010 and reached 10.6 births per 1,000 women in 2023, one of the lowest levels recorded historically, but still reflecting persistent inequities across territories and socioeconomic groups. (12,13,45)

In parallel, broader social policies and institutional arrangements contributed to enabling conditions for change. The Chilean public health system comprises more than 2,300 primary health facilities, guided by nationally defined standards, and Chile's primary health care system—comprising an extensive network of facilities with standardized national guidelines—has played a central role in delivering SRH services. Multisectoral initiatives, including youth-focused programs and social protection schemes such as Chile Crece Contigo, have supported adolescents through integrated approaches that address both health and social determinants. (11,31–32)

Chile has undergone a significant socioeconomic transformation, with GDP per capita increasing from US$10,098 in 2010 to US$17,067 in 2023, (14) alongside substantial reductions in poverty and improvements in women's educational attainment. (15–17) Prior to the COVID-19 pandemic, poverty reached historically low levels; however, persistent inequalities—particularly affecting rural populations, indigenous communities, and marginalized urban areas—continue to shape health outcomes. (16–18)

In parallel, important demographic and social changes have reshaped reproductive patterns. Chile has experienced a sustained increase in women's educational attainment, with average years of schooling rising from approximately 9–10 years in the early 2000s to over 12 years in the 2020s. Female participation in tertiary education has also expanded substantially, reflecting broader transformations in gender roles and opportunities. At the same time, demographic and social changes have reshaped reproductive patterns. Marriage has declined, and union formation has been postponed, with partnerships increasingly concentrated in young adulthood (ages 25–34). These shifts contribute to reductions in

early childbearing but also concentrate adolescent fertility among more socioeconomically vulnerable groups, reinforcing patterns of inequality. (17,19,57)

This study examines how Chile mobilized political commitment and reoriented its health system to better respond to adolescents' sexual and reproductive health needs, with a particular focus on access to contraception and prevention of adolescent pregnancy focusing on policy, governance and service delivery.

METHODS

This study employed a qualitative case study design to examine political and health system transformation to address adolescents' sexual and reproductive health and rights (SRHR). The case study approach was selected to enable an in-depth, context-sensitive analysis of policy processes, institutional dynamics, and health system transformations, while situating these within broader social and structural conditions.

Analytical framework

The analysis was guided by two complementary frameworks. First, Shiffman and Smith's political prioritization framework examines how adolescent pregnancy emerged as a national policy priority and focuses on the interaction between actors, ideas, political contexts, and issue characteristics in shaping political attention and commitment. (20) Second, the World Health Organization's Health Systems Building Blocks framework was used to analyze how policy commitments were translated into health system changes across six domains: leadership and governance, health financing, service delivery, health workforce, health information systems, and access to essential medicines and technologies. (21,22)

The combined use of these frameworks allowed for a sequential and integrated analysis: first, to understand how adolescent SRHR gained political salience, and second, to examine how this prioritization was operationalized through health system reforms. This approach enabled the study to link political processes with implementation dynamics, while recognizing that health system responses are embedded within broader social and institutional contexts.

Data sources

Table 1. Data sources used in the case study

Data were drawn from multiple sources to enable triangulation and strengthen the validity of findings. These included: national administrative data on fertility and births from the Department of Health Statistics and Information (DEIS), repeated cross-sectional survey data from the National Youth Survey (INJUV), national policies, strategies, and legislation related to adolescent SRHR and fertility reduction, government program documents and technical guidelines related to adolescent health services, peer-reviewed literature on adolescent fertility and SRHR in Chile, and regional and international reports providing contextual information on socioeconomic and demographic trends.

Data analysis

Data were analyzed using a thematic and framework-based approach. First, documentary and quantitative data were reviewed to construct a timeline of policy developments and adolescent fertility trends. Second, data were coded deductively using the two analytical frameworks, while allowing for inductive identification of emergent themes related to gender norms, inequalities, and access to services. Attention was paid to identifying how

policies and health system interventions addressed—or failed to address—inequities related to socioeconomic status, territory, and gender.

RESULTS

Table 2 : Legislation and milestones in adolescent pregnancy prevention in Chile.

Year	Legislative & Regulatory Milestones	Health Programs & Services
1995		Establishment of the National Adolescent Health Program
1999		Implementation of the Adolescent and Youth Health Policy
2004	**Law 19.927:** Increased the legal age of consent for sexual relations	
2008		Introduction of Friendly Adolescent Spaces (AFS)
2010	**Law 20.418:** Established norms for fertility regulation and guaranteed access to emergency contraception	Introduction of 3-year LARC implants; Establishment of the National Advisory Youth Council
2011		Launch of the National Health Strategy 2011–2022 (Goal: Reduce adolescent fertility rate)
2012		Adolescent Health Control implemented; National Adolescent Health (PHC) Action Plan (2012–2020) launched
2015	Emergency contraception made available without a medical prescription	Expansion of the AFS network
2016		Continued expansion of AFS; Implementation of the Adolescent Health Information System
2017	**Law 21.030:** Decriminalized abortion under three specific causes; Authorized HIV testing for adolescents without parental consent	HIV testing protocol established; Introduction of 5-year LARC implants
2018		Action Plan for Adolescent Health (2018–2025) launched; AFS technical guidelines updated; Female condoms made available
2020		Continued expansion of the AFS network
2021		Updated Technical Orientations for Adolescent Health; Revised Adolescent Health Control protocols

Leadership and governance: political commitment within a rights-based but incomplete framework

Sustained national leadership, particularly from the Ministry of Health, played a central role in positioning adolescent sexual and reproductive health (SRH) as a public policy priority across successive governments with differing political orientations. This continuity reflects a relatively stable political commitment to reducing adolescent fertility, supported by the

central government, the legislature, and a network of institutional mechanisms that collectively strengthened governance for adolescent health.

Key institutions included the Instituto Nacional de la Juventud (INJUV), responsible for generating evidence on youth conditions through periodic national surveys, (23,40,57) and the Adolescent and Youth Health Program, established in 1995 and progressively expanded to coordinate policy and service delivery. (10,24,32) In parallel, the establishment of the Ombudsman for Children's Rights contributed to advancing a rights-based institutional environment for adolescents. (25)

Legislative and policy milestones further reinforced this governance architecture. Law 20,418 (2010) was a milestone that formally recognized and guaranteed adolescents' rights to access contraceptive information and services, (26) while Law 21,030 (2017) partially liberalized abortion under three specific grounds. (27) The National Health Strategy 2011–2020 set explicit targets for reducing adolescent fertility and mandated the implementation of adolescent-friendly services across the health system. These efforts were complemented by the National SRH Strategy (2018) and the establishment of youth advisory bodies aligned with the regional PLANEA framework. (8–11,28)

The institutionalization of Adolescent-Friendly Spaces (AFS) within primary health care represents a key governance achievement, translating policy commitments into operational structures nationwide. (24,29–31) However, despite this robust policy architecture, important gaps remain. Notably, Chile lacks a national policy guaranteeing comprehensive sexuality education (CSE) across all levels of schooling, reflecting ongoing political and ideological tensions around adolescent sexuality and rights. (11,43,58)

Service delivery: scaling adolescent-friendly care with increasing reach but unequal access

Figure 1. Number of health facilities and municipalities implementing Adolescent-Friendly Spaces (AFS), Chile, 2016–2023 *Data source: Administrative data from the Adolescent-Friendly Spaces Program, Ministry of Health, Ministry of Finance, and Ministry of Social Development, Chile (2016–2023).Available at: http://www.dipres.gob.cl/597/articles-383633_doc_pdf*

The expansion of Adolescent-Friendly Spaces (AFS) constitutes one of the most significant transformations in service delivery. The number of AFS sites increased from 54 in 2008 to 375 in 2022, substantially improving geographic availability of adolescent-responsive services. These spaces were designed to address key barriers faced by adolescents—such as lack of confidentiality, stigma, and limited accessibility—by offering differentiated care models with extended hours, privacy safeguards, carefree of charge, and youth-centered approaches. (24,29,31,32)

Figure 2. Annual Service Utilization in Adolescent-Friendly Services, 2008–2023. *Adolescent Friendly Spaces Program, Ministry of Health; Ministry of Finance and Ministry of Social Development of Chile, 2016–2023, available at: http://www.dipres.gob.cl/597/articles-383633_doc_pdf*

This expansion was accompanied by a marked increase in service utilization. National administrative data show that the number of adolescent beneficiaries rose from 442,947 in 2016 to 858,621 in 2023, despite a temporary decline during the COVID-19 pandemic.

This trend reflects both increased supply of services and growing demand, suggesting improved acceptability and accessibility of adolescent-responsive care. (29,31)

AFS provides a comprehensive package of services, including SRH counselling, access to a wide range of contraceptive methods, mental health support, and the Control Joven Sano (comprehensive adolescent health check), supported by a standardized clinical information system. (29,33) Collaboration with schools, municipalities, and community organizations has further enabled a more integrated and multisectoral approach to adolescent well-being. (24,29,31,38)

However, access to these services remains uneven. Territorial disparities persist, particularly in rural and socioeconomically disadvantaged areas, and not all adolescents are equally able to benefit from these services. Barriers related to social norms, stigma, and unequal distribution of resources continue to shape utilization patterns. (29,34)

Health workforce: gradual shift toward adolescent-responsive and rights-based care

The Chilean health workforce has progressively incorporated an adolescent-responsive approach to care. National guidelines emphasize confidentiality, non-discrimination, and respect for adolescents' evolving capacities, aligning with a rights-based framework for service provision. Training initiatives have focused on adolescent development, SRH protocols, gender sensitivity, and rights-based care, contributing to improvements in provider competencies and attitudes. Staff in these centers are trained to navigate the legal requirements of Law 20,418, ensuring adolescents' right to information while balancing the legal mandates regarding parental notification for specific age groups. (26,29)

While a formal national certification in adolescent health care has not yet been established, ongoing in-service training and supportive supervision have strengthened the quality of care. Nonetheless, variability in implementation persists. Differences in training coverage, provider attitudes, and institutional cultures may affect adolescents' experiences of care, particularly in more conservative or resource-constrained settings. (29,32)

Health information systems: increasing visibility with persistent gaps

Chile has strengthened its health information systems to better capture adolescent SRH indicators, including service utilization, contraceptive use, and pregnancy outcomes. The national Adolescent Program in 1995 already disaggregated data by age, making this group visible. The integration of tools such as the Control Joven Sano and associated information systems has enabled more systematic data collection and monitoring. (29,33,38) These systems have improved the capacity to identify gaps in coverage and inform policy decisions. However, limitations remain in terms of data disaggregation, particularly regarding intersectional dimensions such as ethnicity, migration status, and socioeconomic vulnerability. This constrains the ability to fully understand and address inequities in adolescent SRH outcomes. (29,)

Health financing: increased investment with emerging sustainability challenges

Between 2018 and 2022, public investment in adolescent health—including SRH—increased by approximately 40%, supporting the expansion of AFS and strengthening primary health care responses. (35,39) Chile's public insurance system (FONASA) provides financial protection for most adolescents, enabling access to services in public facilities without direct costs and reducing financial barriers within the household. (35)

While this financing expansion has been critical for scaling up services, the recent stabilization of funding levels raises questions about long-term sustainability. The integration of adolescent health within broader primary care financing mechanisms has supported institutionalization but may also limit the visibility and prioritization of adolescent-specific needs in the future. (24,29,39)

Medical products and technologies: improved contraceptive access within system constraints

Although no adolescent-specific procurement system was established, improvements in national supply chains have enhanced the availability of contraceptive methods, including long-acting reversible contraceptives (LARCs). This has reduced stockouts and supported more consistent provision of services within AFS and primary care facilities. Expanded access to a broader contraceptive mix has been a key enabler of declining adolescent fertility. (29,41,42) However, access alone does not fully address barriers related to information, autonomy, and social norms, which continue to influence adolescents' ability to exercise their reproductive rights. (41–43,58)

Health outcomes: shifts in sexual behavior, contraceptive use, and adolescent fertility

Sexual initiation and behavioral trends

Adolescent sexual behavior in Chile has undergone important changes over time, reflecting broader social, educational, and demographic transformations with delay in sexual initiation and decline in early unions. The proportion of adolescents aged 15–19 years reporting sexual initiation declined from a peak of 51.7% in 2012 to 41.5% in 2018, with a more pronounced reduction among those aged 15–17 years (from 39.6% to 25.2%). Data show

that the proportion of individuals reporting sexual activity at age 19 decreased slightly from 70.4% in 1997 to 66.9% in 2022, with convergence between males and females. The average age at sexual initiation was 16.5 years in 2018, with no significant gender differences, and adolescents aged 15–19 reported an average of 1.6 sexual partners. Despite these overall trends, sexual initiation remains strongly socially patterned. Adolescents from lower socioeconomic backgrounds tend to initiate sexual activity earlier and at higher rates than their more advantaged peers, contributing to persistent inequalities in reproductive outcomes. (12,40,41)

Contraceptive use: increasing coverage with persistent gaps in effective protection

Several studies documented the expansion and diversification of contraception with the increase of modern contraceptives and LARCs, besides the increased availability of emergency contraception. (41–43)

Figure 3. Contraceptive use among sexually active adolescents aged 15–19 years (last 12 months), Chile, 2006–2022. Data source: *National Youth Survey (INJUV), 2006–2022.*

Contraceptive use among adolescents has increased substantially over time, particularly at sexual debut. The proportion of adolescents aged 15–19 years who were sexually active and using any contraceptive or protective method in the previous 12 months increased from approximately 77.5% in 2009 to 86% in 2022; contraceptive use at first sexual intercourse increased from 77.5% in 2018 to 86.6% in 2022. (40,41)

Figure 4. Use of long-acting reversible contraceptive (LARC) methods among sexually active adolescents aged 15–19 years, Chile, 2006–2022.*Data source: National Youth Survey (INJUV), 2006–2022.*

The method mix has evolved, at first with increases in condom use: in 2009, 51.0% of adolescents 15–19 years old reported condom use at last sexual intercourse, rising to 74.4% in 2022, as well as growth in the use of emergency contraception (2.1% in 2015 to 7.4% in 2022), hormonal injectables (3.5% to 8.2%), and subdermal implants (1.0% to 3.8%). At last sexual intercourse, there has been a shift toward increased uptake of long-acting reversible contraceptives (LARCs), particularly implants (3.4% to 6.0%). Subdermal implants were not present in the 2006 and 2009 INJUV surveys; available data show that use of implants among adolescents aged 15–19 who were sexually active in the last 12 months increased from around 2% in 2011 to 8.5% in 2022. A clear pattern of social selectivity emerges long-acting reversible contraceptives (LARCs) use is significantly higher among adolescents from lower socioeconomic groups. This distribution reflects the orientation of public health policies—such as the "Espacios Amigables"—which explicitly prioritize high-risk populations and facilitate access to highly effective contraceptive methods within the public health system. (24,29,40–42)

Impact of COVID-19 on contraceptive access

The COVID-19 pandemic disrupted access to sexual and reproductive health services and contraceptive supplies. Evidence indicates that approximately 12.87% of young women discontinued their contraceptive method, while 17.76% were forced to switch methods due to access barriers during the period 2020–2022. (44,48)

Adolescent fertility rate

Figure 5. Fertility rates (ages 15–19) and fertility ratios (ages 10–14) among adolescents, Chile, 2010–2023 Data source: *Department of Health Statistics and Information (DEIS), Ministry of Health, Chile; National Institute of Statistics (INE).*

Chile has experienced a marked and sustained decline in adolescent fertility over the past decade. The adolescent fertility rate among girls aged 15–19 years decreased from 51.6 births per 1,000 in 2010 to 10.6 in 2023, representing an approximate 79% reduction. (45,47) Among younger adolescents aged 10–14 years, fertility declined from 1.5 per 1,000 in 2010 to 0.3 in 2023. Although absolute levels are considerably lower than those observed in older adolescents, the persistence of fertility in this age group remains epidemiologically and ethically significant, given its strong association with structural vulnerability, sexual violence, and social inequities. (45–47)

The trajectory shows a gradual decline between 2010 and 2014, followed by a sharper reduction between 2014 and 2016, suggesting a possible inflection point associated with expanded policy and service interventions. More recent estimates indicate that the fertility rate among adolescents aged 15–19 has reached historically low levels of approximately 9 births per 1,000 in 2024. (47) A temporary interruption in the downward trend was observed in 2022, likely reflecting the delayed effects of the COVID-19 pandemic, including disruptions in contraceptive access, reduced utilization of adolescent-friendly services, school closures, and increased exposure to gender-based violence. (44,48)

Despite these advances, adolescent fertility remains deeply socially patterned. Adolescent motherhood is increasingly concentrated among the most socioeconomically disadvantaged groups and is nearly absent among the highest income deciles. For example, in 2017, 11.5% of adolescents in the lowest income decile were mothers, compared with only 0.2%

in the highest decile. Persistent territorial disparities also remain, particularly in northern regions such as Tarapacá and Antofagasta, and among adolescents in more disadvantaged municipalities. These patterns highlight the continued influence of structural determinants—including poverty, gender inequality, and unequal access to services—on reproductive outcomes. (12,34,49)

Abortion and reproductive rights: partial legal reform and unequal access

The enactment of Law No. 21.030 in 2017, which liberalized abortion under three circumstances (risk to the woman's life, lethal fetal anomaly, and pregnancy resulting from rape), represents a major advance in Chile's SRHR framework, particularly for adolescents affected by sexual violence. The law includes differentiated gestational limits, extending access up to 14 weeks in cases of rape for girls under 14 years. (27,51)

Between 2017 and 2023, 4,555 legal terminations were reported (≈808 annually), with cases due to rape increasing to 29.7% of total procedures in 2023. Among these, 15% involved girls under 14 and 14.1% adolescents aged 14–17. During the same period, pregnancies among girls aged 10–14 declined (389 in 2018 to 222 in 2020), suggesting that access to legal termination may have reduced the total number of births, although estimates should be interpreted cautiously. Despite these advances, access remains unequal, with higher reported abortion rates among adolescents from higher socioeconomic groups (≈10% vs. 2% nationally), indicating disparities in access and potential underreporting among more vulnerable populations. Overall, while the reform strengthened reproductive rights, it has only contributed very slightly to the decline in in adolescent fertility, which is

more plausibly linked to broader improvements in contraceptive access, education, and social conditions. (50–53)

DISCUSSION

This study offers a comprehensive analysis of the decline in adolescent fertility in Chile. We draw on the updated Proximate Determinants of Fertility framework, which builds on Bongaarts' original model and emphasizes that changes in fertility ultimately operate through a limited set of biological and behavioral mechanisms—namely sexual exposure, contraception, induced abortion, and postpartum infecundability. (54–56)

As Stover highlights, broader social, economic, and structural forces exert their influence indirectly through these proximate determinants. Within this framework, the sustained decline in adolescent fertility in Chile can be interpreted as the result of both distal transformations—such as rising educational attainment, improved socioeconomic conditions, and expanded access to information—and more immediate programmatic factors, particularly the expansion and strengthening of contraceptive services. (17,57) Our findings suggest an increase in access to contraception, driven by the removal of key legal and institutional barriers, alongside strengthened public provision and the introduction and expansion of highly effective contraceptive methods and the availability of emergency contraception, particularly for more vulnerable adolescents. This has been the principal proximate mechanism underpinning the observed decline, occurring in a context where sexual behavior patterns appear relatively stable and where access to safe abortion services has historically been limited. This reinforces the central role of health system interventions,

especially those that improve access, acceptability, and continuity of contraceptive care, in shaping fertility outcomes among adolescents. (41–43,58)

Chile's trajectory illustrates how sustained political commitment, combined with strategic framing of adolescent pregnancy as both a public health and social equity issue, can generate long-term change. Policy continuity, normative shifts that increasingly positioned adolescents' rights, including sexual and reproductive rights—and well-being at the center of policy and service provision, the progressive institutionalization of adolescent-friendly services, and the integration of sexual and reproductive health within broader social policies contributed to both scale and sustainability. Leadership has been critical in this process, particularly the interaction between internal institutional champions and external actors, including international agencies and civil society—which helped maintain momentum and accountability over time. The establishment and subsequent scale-up of adolescent-friendly services ("Espacios Amigables") played a key role in improving access not only to contraception but also to counselling and information. (8–11,24,29,31,32)

However, these gains remain partial and uneven. Persistent socioeconomic and territorial inequities continue to shape access to services and outcomes. Moreover, progress in comprehensive sexuality education remains limited and contested, reflecting broader sociopolitical tensions around gender, sexuality, and adolescent autonomy. These gaps highlight the need for a more explicit integration of gender-transformative and rights-based approaches that address power relations, social norms, and structural inequalities. (43,58)

From an evaluative standpoint, this study applies the framework of adequacy and probability proposed by Habicht, Victora, and Vaughan. (59) We document clear and

consistent declines in adolescent fertility and associated indicators and provide data supporting the robustness of these trends. However, we do not establish plausibility in a causal sense. While the temporal alignment between policy developments and observed trends is suggestive, attributing changes to specific interventions requires more granular data, counterfactual analysis, and comparative designs. This distinction is essential to avoid over-attribution while maintaining policy relevance. (54–56,59)

Our findings align with global evidence indicating that political prioritization, rights-based legislation, and integrated health systems approaches enable improvements in adolescent SRH. Using Shiffman's political prioritization framework, Chile's experience is consistent with findings from other settings. Amo-Adjei et al. used it to examine how the scale-up of a program for adolescent mothers in Jamaica secured political and governmental support. (60) Shiffman examined what factors contributed to five countries in three world regions placing maternal mortality high on their national agendas before the Millennium Development Goals era, when other countries did not do so. These and other studies point to the importance of external advocates working with internal champions to open windows—or to use available windows—of opportunity, with pointed advocacy on the problem to be addressed and proven and feasible strategies to address it. (20,60)

Similarly, Chile's experience aligns with applications of the WHO Health Systems Building Blocks framework in other domains. One example is that of Enweronu-Laryea et al., who used it to identify bottlenecks hindering the integration of basic newborn care and neonatal resuscitation in health systems in 12 countries in four WHO regions. (61) Belaid et al. applied it to map health policy gaps in South Sudan's reproductive, maternal, neonatal, child, and adolescent health programs. (62) Our analysis adds to this literature by applying

the framework to adolescent fertility reduction in a middle-income country context. To sum up, the two analytic frameworks used in this study have been found to be useful. They have also pointed to where things are going well, and where they are not, providing the basis for problem identification, definition, and solving. (20–22,59–62)

Comparative experiences in adolescent pregnancy prevention from other countries reinforce these interpretations. In England, declines in adolescent pregnancy were associated with coordinated, long-term national strategies characterized by political leadership, sustained investment, and cross-sectoral accountability. (63,64) In Mexico, the ENAPEA strategy highlights both the potential and the limitations of national frameworks operating within decentralized systems, where implementation capacity varies across regions. These cases underscore that reductions in adolescent fertility emerge not from isolated interventions but from coherent, multi-level policy architectures that integrate governance, service delivery, and social change processes. (65–67)

At the regional level, Chile's experience aligns with broader demographic shifts in Latin America and the Caribbean, including delayed childbearing and declining fertility among younger age groups. However, the magnitude and speed of the decline in Chile suggest that policy and health system factors can accelerate these transitions beyond what structural change alone would predict. (45,47,68)

In relation to the potential role of access to safe abortion and post-abortion contraception in reducing adolescent fertility, Uruguay's experience following the legalization of abortion in 2012 under Law 18.987 is illustrative. Adolescent fertility declined substantially; a recent impact evaluation estimated that the reform contributed to a reduction of approximately

2.5–2.8 births per 1,000 adolescents aged 15–19, after controlling for concurrent policies such as the expansion of contraceptive implants. These findings suggest that expanding access to safe abortion services, together with improved access to effective contraception, may contribute to reductions in adolescent fertility. (70) Unfortunately, we do not have comparable data for Chile.

Strengths and Limitations

Strengths of this case study include the combined application of Shiffman's political prioritization framework and the WHO Health Systems Building Blocks approach, which provides a comprehensive understanding of both the political and systemic drivers of change. Together, these frameworks highlight that progress depends not only on technical interventions but also on governance, advocacy, and the alignment of actors and institutions around a shared agenda. Importantly, they also illuminate persistent gaps—particularly in addressing inequities, strengthening intersectoral coordination, and advancing rights-based approaches. Another strength is the use of multiple data sources, including official documents and technical reports spanning several decades, complemented by inputs from individuals who have been centrally involved in adolescent sexual and reproductive health programs for one to two decades in Chile. (8–11,20–22,24,29,31–33,36,39,41–43,45,47,57,58)

Limitations include reliance on secondary data with the attendant risk of selective inclusion and bias, and a focus on SRH (particularly contraceptive services) rather than the full spectrum of adolescent health needs. Second, the absence of a counterfactual limits the ability to establish causal relationships between policy interventions and observed changes

in adolescent fertility. As a result, findings should be interpreted as descriptive and analytically suggestive rather than causal, highlighting plausible contributions rather than definitive effects. Limited examination of the role of non-governmental and private health providers in delivering adolescent-friendly services and the absence of adolescents' own voices are also important limitations, as the study does not include adolescents' direct perspectives.

Sustaining and consolidating these gains requires a strategic shift from expanding coverage toward strengthening equity, quality, and adolescent autonomy. Key policy priorities include ensuring access to a comprehensive contraceptive method mix, institutionalizing comprehensive sexuality education (CSE), reducing inequities by reaching underserved populations, and implementing territorially responsive strategies in high-risk areas. In parallel, it is essential to strengthen monitoring, evaluation, and accountability systems, while protecting and expanding sustained financial investments in adolescent health. Future research should move beyond descriptive analyses toward robust causal approaches that clarify the relative contribution of policies, programs, and broader social changes. Subnational and intersectional analyses will be critical to identify who benefits from progress and who remains excluded. Ultimately, reducing adolescent pregnancy is not only a technical or service delivery challenge, but a matter of gender equality, adolescent agency, and sexual and reproductive rights. Chile's experience highlights that sustained progress depends on continuous political commitment, adaptive policy design, and a strong, explicit focus on equity and rights.

CONCLUSION

Chile's experience demonstrates that rapid and sustained reductions in adolescent fertility are achievable when adolescent sexual and reproductive health is positioned as a public priority and addressed through coherent, rights-based, and system-wide strategies. The integration of adolescent-friendly services within the national health systems -supported by legal reforms, political commitment, implementation and monitoring using a cyclic learning-by-doing approach and sustained programmatic innovation—has been central to this progress. However, as this analysis shows, aggregate success coexists with persistent inequities and unresolved structural challenges. Overall, Chile's experience reflects the importance of sustained political commitment and health system strengthening but also highlights the limits of service expansion in addressing deeper structural and gendered determinants of adolescent pregnancy.

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Abbreviations

AFS: Adolescent-Friendly Spaces

CSE: Comprehensive Sexuality Education

FONASA: Fondo Nacional de Salud

INJUV: Instituto Nacional de la Juventud

LARC: Long-Acting Reversible Contraceptive

SRH: Sexual and Reproductive Health

WHO: World Health Organization

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