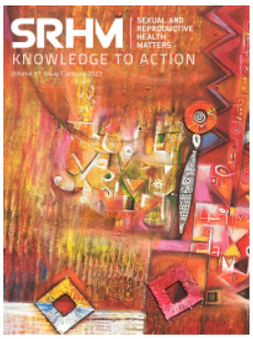

Sexual and Reproductive Health Matters

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RESEARCH ARTICLE

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Analysing the context and characteristics of legal abortion and comprehensive post-abortion care among adolescents aged 10–14 in a network of sentinel centres in Latin America: a retrospective cross-sectional study, 2016–2020

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Abstract: *Pregnancy-related complications are a substantial source of morbidity and mortality among adolescents in low- and middle-income countries. While the youngest adolescents (those aged 10–14) are considered to be at particularly high risk of adverse outcomes, there is little empirical data available on their sexual and reproductive health. Using a unique dataset of clinical records drawn from a regional network of sentinel centres providing legal abortion and comprehensive post-abortion care in 12 Latin American and Caribbean countries, we described the population of adolescents aged 10–14 seeking legal abortion and post-abortion care and calculated institutional rates of complications, using older adolescents (aged 15–19) and young adults (aged 20–24) as comparator groups. We also assessed the quality of care provided as compared to WHO recommendations. Nearly 17% (89 out of 533) of young adolescents sought care when they were already at 15 or more weeks' gestation. Young adolescents were at higher risk of pre-procedure and intra-operative complications than older adolescents and young adults, though the trend is less clear for the most severe complications. In general, the quality of care provided by centres in the network was aligned with WHO recommendations for safe abortion and comprehensive post-abortion care. Taken together, these findings provide insight into the challenges facing the global health community in assuring the sexual and reproductive health and rights of the youngest adolescents, and outline avenues for future research, advocacy, and evidence-based policymaking.* DOI: 10.1080/26410397.2023.2175442

Keywords: abortion, adolescents, early adolescence, maternal mortality, Latin America and the Caribbean, maternal morbidity, maternal near miss

*Authors who are staff members of the Pan American Health Organization hold sole responsibility for the views expressed in their texts, which may not necessarily reflect the opinion or policy of the Pan American Health Organization.

Introduction

An estimated 1 million births occur to girls under the age of 15 in low- and middle-income countries

(LMICs) every year.[1] Globally, pregnancy-related causes account for 15% of all deaths among girls and women aged 10–24, with deaths concentrated in LMICs.[2] Unsafe abortion is a major contributor to global maternal mortality, with abortions accounting for approximately 7.9% of all maternal deaths worldwide.[3] Young adolescents have higher rates of pregnancy-related morbidity and mortality than older adolescents (aged 15–19) or young adults (aged 20–24),[4,5] and pregnancies among young adolescents often reflect rights violations, including sexual violence and coercion.[6] The limited data available suggest that a large proportion of pregnancies among adolescents aged 10–14 end in abortion.[7,8] However, past calculations of pregnancy-related morbidity and mortality among young adolescents[4,5] have relied on data from birth records, excluding those who have had abortions.

As of 2019, 41% of the global population lives in countries where abortion is significantly restricted.[9] Latin America and the Caribbean (LAC) is one of the regions where access to abortion is most highly restricted. People may only legally access abortion without providing justification (e.g. risk to life or health) in a handful of countries, and even then, only up to 8, 12, or 14 weeks' gestation (at the time of data collection, Guyana, Cuba and Uruguay, and Argentina, respectively). Some jurisdictions in Mexico (Mexico City, Oaxaca, Hidalgo, and Veracruz) also fully recognise the right to abortion without need for justification up until 12 weeks' gestation, but other states criminalise all abortions other than those that occur in response to cases of rape. Providing post-abortion care is a legal obligation in all countries in the region, in line with World Health Organization (WHO) recommendations and United Nations treaty body jurisprudence.[10,11] Yet in practice, in countries where abortion is heavily restricted or prohibited altogether, pregnant people may fear that seeking post-abortion care could make them targets for state surveillance and harassment.[12] Some have suggested that young adolescents are disproportionately impacted by abortion restrictions,[13,14] but there are few empirical studies on this group as adolescents under the age of 15 are generally excluded from surveys on reproductive health.[8]

The objective of this study is to provide insight into the public health challenge of abortion among adolescents aged 10–14 in LAC, using data from a network of sentinel centres providing legal abortion and post-abortion care in the region in the period 2016–2020. The study has three components. First, we describe the population of young adolescents served by the network, including reviewing data on contraceptive use prior to pregnancy (we include older adolescents and young adults as comparator groups). Second, we calculate the rates of pre-procedure complications, intra-operative complications, and near misses for young adolescents served by the network (again using older adolescents and young adults as comparator groups). Finally, we assess the quality of care received by adolescents aged 10–14 by comparing the care provided in network facilities with WHO recommendations, with special attention to post-abortion contraception. With this analysis, we seek to better characterise the challenges facing this vulnerable population in the region.

Consistent with the approach in the new WHO *Abortion Care Guideline*,[15] throughout the article we use the terms girls, adolescents, women, and people interchangeably to include all those with the capacity to become pregnant.

Methods

Setting

Coordinated by the Pan American Health Organization's Latin American Center for Perinatology/Women's Health and Reproductive Health (CLAP-SMR), the ***CLAP MUSA Network*** (acronym for Women in Abortion Situations in Spanish) represents a regional effort to improve reproductive health. The term "abortion situations" is an intentionally broad umbrella that encompasses the full range of abortion experiences, whether spontaneous or induced, legal or clandestine, safe or unsafe. The CLAP MUSA Network consists of 40 sentinel centres across 16 LAC countries.[16] Some centres are public hospitals while others are private abortion clinics, depending on the country. Sentinel centres in the CLAP MUSA Network provide legal abortion (under the grounds permitted by the country's legal framework) and post-abortion care (regardless of the type or cause of abortion).

Initiated in 2015, the Network supports the health professionals working in sentinel centres to strengthen monitoring of outcome indicators, to improve the use of evidence-based interventions to prevent and manage severe complications of unsafe abortion (including maternal mortality),

and to enhance the provision of comprehensive post-abortion care. With the launch of the CLAP MUSA Network, LAC became the first world region with a network of sentinel centres providing continual monitoring of the care provided to people in abortion situations.

Ethics

This project was reviewed by the PAHO Ethics Review Committee and determined to be exempt (Submission number: PAHOERC.0264.01; September 2020).

Data

The current study is a retrospective cross-sectional analysis of pooled 2016–2020 clinical data drawn from the standardised electronic medical record used across all sentinel centres, the Perinatal Information System – Abortion (SIP-A). Though designed principally for the documentation of clinical data relevant to care provision, the CLAP MUSA Network also uses the SIP-A to monitor and evaluate the quality of abortion and comprehensive post-abortion care, including contraceptive guidance and service delivery. The SIP-A has been developed and extensively tested following the care standards proposed by WHO.[17] Although the Network's formal coordination and technical assistance began in 2015, some sentinel centres joined later, and one centre ended its formal participation early. The database used in this analysis includes data from the 35 sentinel centres active at the time of data collection, covering 12 countries, and consists of 85,524 clinical records in total, with a subset of these (girls and women aged 10–24, $N = 37{,}534$) included in the current study.

Since the CLAP MUSA Network provides both legal abortion and post-abortion care, the SIP-A database includes both types of cases. While some procedures are carried out following admission to the facility, others are primarily outpatient procedures (e.g. provision of medical abortion in some facilities). Reflecting this, we use the term "cases" to refer to the universe of legal abortion and post-abortion care services provided during the study period, and the term "adverse events" to refer to complications. Importantly, our data represent only the universe of legal abortion and post-abortion care services provided by CLAP MUSA Network facilities; they are in no way representative of all (spontaneous and induced) abortions in the included countries. Still, they provide insight into the care offered within these facilities and offer a rare glimpse into the experiences of young adolescents seeking abortion-related services.

As the data used in this study are drawn from clinical records, data completeness is not equivalent to what would be expected from a prospectively designed study. Data quality improved over the study period, thanks to quality monitoring efforts led by CLAP-SMR, but is heterogeneous across study facilities. In general, clinical documentation rates were quite high, with documentation of personal and family history, completed labs, and the initial clinical exam all having median completion rates above 85%. However, the documentation of subsequent procedure-related variables and certain outcomes variables (notably, near miss) was lower, as reflected in the denominators of other clinical variables. We examined correlation of missingness across all variables included in the study and explored the possibility of using multiple imputation strategies before determining that they were not feasible given available data. We do not report the results of those analyses for space considerations but do describe the potential implications of missing data for our findings in the discussion.

We also analysed the laws governing abortion access among young adolescents in each of the participating countries, using the WHO Global Abortion Policies Database.[18] Based on that information, we categorised countries as having either a less or more restrictive legal context. Given that LAC has such restrictive abortion laws, countries were considered to have a less restrictive context if abortion was legal at least to preserve the physical health of the pregnant person, and a more restrictive context if abortion was entirely prohibited or only allowed in cases of rape or where the life of the pregnant person was at risk.

Analysis

First, we calculated descriptive statistics for demographic and obstetric characteristics. Among the included variables are country, legal context, adolescent's/woman's educational attainment, obstetric history, type of care sought, whether the pregnancy was intended, whether the pregnancy was the result of a contraceptive failure, and, if so, which method was being used. We used χ^2 tests to determine whether there were statistically significant differences in the distributions of each of the demographic and obstetric characteristics among three age groups (10–14 years, 15–19

years, and 20–24 years; statistical significance: $p < 0.05$ and 95% confidence). Next, we calculated the rates of three types of institutional adverse events: complications at intake (hereafter referred to as pre-procedure complications), intra-operative complications, and maternal near miss, following WHO definitions.[19] Findings are presented as institutional adverse event rates per 10,000 cases (legal abortion and PAC). We compared adverse event rates between three age groups (10–14 years, 15–19 years, and 20–24 years) statistically using the χ^2 test (statistical significance: $p < 0.05$ and 95% confidence).

Finally, we developed an approach for measuring the quality of care provided to adolescents aged 10–14, which we defined in this context as the level of concordance between clinical practice with the WHO recommendations as specified in *Abortion Care Guideline*, *Safe Abortion: Technical and Policy Guidance for Health Systems* (2nd ed.), *Medical Management of Abortion*, and *Health Worker Roles in Providing Safe Abortion Care and Post-abortion Contraception*.[11,15,20,21] We extracted each of the clinical recommendations from the four texts and came to consensus about how to measure concordance with each guideline based on the clinical data registered in the SIP-A. We also developed composite indicators for documentation of clinical practices (i.e. documentation of laboratory tests is presented as a single indicator rather than as one indicator per test). Although this methodology has been previously used to investigate quality of care in other areas of health such as hypertension,[22–24] caesarean section,[25,26] and ectopic pregnancy,[27] based on the reviewed literature, it has not yet been applied to studies of abortion care. We conducted complete case analysis for each of these indicators and, following the methodology of these other studies, report percentage of relevant cases where clinical practice was concordant with WHO recommendations.

Results

The analysed database contains 632 clinical records from adolescents aged 10–14 (1.7% of the sample), 12,497 records from adolescents aged 15–19 (33.3% of the sample), and 24,405 records from young women aged 20–24 (65.0% of the sample). Just over half (18,991 or 50.6%) of the records come from Colombia, with these records making up similar proportions of the dataset across all three age groups. Over 80% of records in all age groups came from countries with less restrictive legal contexts. With respect to education, 447 young adolescents (71.1%), 10,804 older adolescents (87.2%), and 21,492 young women (88.9%) had completed at least some secondary school. Since most (68.6%) young adolescents were age 14, they would have been expected to have completed at least some secondary school. Approximately two-thirds (65.1%) of young adolescents, 39.6% of older adolescents, and 20.2% of young women were primigravidas. Over two-thirds (67.8%) of the whole sample and 70.0% of adolescents aged 10–14 sought legal abortion care, while the rest sought comprehensive post-abortion care (Table 1).

Over 92% of analysed clinical records pertained to first trimester pregnancies. Pregnancies with greater than 14 weeks of gestation were more common among young adolescents (16.7% of cases as compared to 8.1% of cases among older adolescents and 6.9% of cases among young women, $p < 0.001$). The vast majority (91.2% or 30,020 cases) of pregnancies were unintended; this figure reached 94.8% among adolescents aged 10–14 ($p = 0.007$). However, 62.1% of adolescents and young women in the sample had not been using any contraceptive method prior to becoming pregnant, with non-use highest among adolescents (92.3% among young adolescents and 87.1% among older adolescents; $p < 0.001$). Among those 5,180 individuals who used contraception prior to becoming pregnant and experienced a contraceptive failure, 52.4% had been using a hormonal method (e.g. oral contraceptives), 37.3% had been using a barrier method, 5.0% had been using an IUD, 3.5% had used emergency contraception, and 1.8% had been using a traditional method. Usage of barrier methods was much higher among adolescents than young women: 58.1% among adolescents aged 10–14 and 45.2% among adolescents aged 15–19 ($p < 0.001$).

Pre-procedure adverse event rates were substantially higher among young adolescents (619.1 adverse events per 10,000 cases) than among older adolescents (413.3) and young women (343.6). This pattern was repeated with intra-operative complications. In contrast, rates of institutional near miss were lower among the youngest adolescents (30.4) than among older adolescents (68.7) and young women (87.7). All these results were statistically significant (Table 2).

Table 1. Characteristics of the population aged 10–24 attended by the CLAP MUSA Network.

	Adolescents aged 10–14	Adolescents aged 15–19	Young women aged 20–24	Total	*P*-value for difference between age groups
Country	*N* = 632	*N* = 12,497	*N* = 24,405	*N* = 37,534	
Argentina	12.0%	5.7%	6.4%	6.3%	<0.001
Bolivia	15.7%	9.8%	9.3%	9.6%	
Brazil	-[a]	0.3%	0.5%	0.4%	
Chile	-[a]	1.1%	1.9%	1.6%	
Colombia	40.5%	48.5%	51.9%	50.6%	
Cuba	12.8%	12.6%	9.6%	10.7%	
Dominican Republic	7.0%	7.3%	5.5%	6.1%	
Honduras	7.3%	6.7%	5.0%	5.6%	
Mexico	1.0%	1.2%	0.8%	0.9%	
Panama	1.0%	2.7%	3.3%	3.1%	
Paraguay	-[a]	0.14%	0.2%	0.2%	
Peru	1.7%	3.94%	5.6%	5.0%	
Legal context	n = 632	n = 12,497	n = 24,405	n = 37,534	
Less restrictive	82.8%	80.6%	82.9%	82.1%	<0.001
More restrictive	17.3%	19.4%	17.1%	17.9%	
Adolescent's/Woman's education	n = 629	n = 12,397	n = 24,169	n = 37,195	
None	4.1%	4.2%	4.6%	4.5%	<0.001
Primary	24.8%	8.6%	6.5%	7.5%	
Secondary+	71.1%	87.2%	88.9%	88.0%	
Previous pregnancies	n = 576	n = 11,491	n = 22,219	n = 34,286	
0	65.1%	39.6%	20.2%	27.5%	<0.001
1	33.7%	47.3%	41.9%	43.6%	
2+	1.2%	13.0%	37.9%	28.9%	
Previous births	n = 520	n = 10,921	n = 21,516	n = 32,957	
0	97.1%	83.7%	55.9%	65.7%	<0.001
1+	2.9%	16.3%	44.1%	34.3%	
Previous abortions (spontaneous & induced)	n = 521	n = 10,961	n = 21,432	n = 32,914	
0	95.4%	83.2%	72.8%	76.6%	<0.001
1+	4.6%	16.8%	27.2%	23.4%	
Gestational age	n = 533	n = 10,564	n = 20,444	n = 31,541	
≤ 14 weeks	83.3%	91.9%	93.1%	92.5%	<0.001
≥ 15 weeks	16.7%	8.1%	6.9%	7.5%	

(*Continued*)

Table 1. Continued

	Adolescents aged 10–14	Adolescents aged 15–19	Young women aged 20–24	Total	*P*-value for difference between age groups
Type of care sought	n = 609	n = 12,024	n = 23,647	n = 36,270	
Legal abortion	70.0%	67.6%	67.8%	67.7%	0.481
Post-abortion care	30.0%	32.4%	32.2%	32.3%	
Pregnancy intention	n = 557	n = 11,088	n = 21,260	n = 32,905	
Unintended pregnancy	94.8%	91.4%	91.1%	91.2%	0.007
Intended pregnancy	5.2%	8.6%	8.9%	8.8%	
Use of contraceptives prior to becoming pregnant (method failure)	n = 555	n = 10,547	n = 20,650	n = 31,752	
None used	92.3%	87.1%	81.7%	62.0%	<0.001
Barrier	4.5%	5.9%	6.2%	4.5%	
IUD	-[a]	0.5%	1.0%	0.6%	
Hormonal	2.7%	5.9%	10.1%	6.3%	
Emergency	-[a]	0.5%	0.6%	0.4%	
Natural	0.0%	0.2%	0.4%	0.2%	

[a]Data suppressed to protect privacy.

After reviewing health outcomes, we probed further into the quality of care received by adolescents aged 10–14. Analysis of documented data shows overall high rates of consistency between WHO recommendations and the clinical practices of the CLAP MUSA Network sentinel centres. The vast majority of procedures were conducted using a method recommended by WHO, per the gestational age (≤14 weeks' gestation: 98.6%; ≥ 15 week's gestation: 87.4%). With that said, use of prophylactic antibiotics was lower than recommended by WHO: in 21.8% of cases where prophylactic antibiotics were indicated according to WHO guidance, they were not provided. In addition, the data show frequent use of cervical preparation techniques, including for medical abortions (data not shown), which may reflect an abundance of care taken within this very young population.

All young adolescents with complete documentation of post-procedure care received guidance about basic care and warning signs prior to discharge, and only one did not receive post-abortion contraceptive guidance. In over two-thirds of cases (68.2%), young adolescents initiated a modern contraceptive method prior to discharge. The most commonly selected methods were the implant (39.6%), the injectable (35.0%), and the IUD (13.4%) (Table 3).

Discussion

This analysis sought to characterise the care provided to adolescents aged 10–14 in abortion situations by a network of sentinel centres dedicated to such services in LAC countries. In it, we described the population receiving care, the institutional adverse event rates, and the quality of care provided within the network, including around post-abortion contraceptive provision. Several notable findings include the high rates of adverse events among young adolescents as compared to older adolescents and young women, and the use of contraception by adolescents. Below, we treat each of these findings in turn.

The results of our analysis show that young adolescents had high rates of pre-procedure and intra-operative complications, as well as maternal near miss. These findings align with the limited

Table 2. Institutional adverse event rates.

	Adolescents aged 10–14	Adolescents aged 15–19	Young women aged 20–24	*p* value
Pre-procedure complications	619.1	413.3	343.6	**<0.001**
Intra-operative complications	40.2	16.0	27.4	**0.005**
Near miss	30.4	68.7	87.7	**<0.001**

available empirical data on obstetric outcomes among young adolescents, which suggest higher rates of severe complications, near miss, and maternal mortality in this population as compared to older adolescents and young women. Using clinical records of institutional births, Conde-Agudelo et al. found that the rate of maternal death per 10,000 live births among young adolescents in Latin America was over four times that of older women.[4] In Brazil, Oliveira and colleagues found more mixed results, with young adolescents faring worse than older adolescents and young women but better than women aged 35 and older.[5] However, both studies relied on records of births and did not include abortions. Kassebaum et al.'s estimates from the Global Burden of Disease study include calculations for abortion among adolescents aged 10–14 years, but these are based on modelling data rather than clinical records.[28] In contrast, our study uses clinical records to provide a direct accounting of young adolescents' experiences of care. As such, a major contribution of this study is that it begins to quantify the increased risk that young adolescents have of experiencing adverse outcomes as compared to older adolescents and young women. However, this finding should be interpreted bearing in mind several important elements. As we explain in more detail in the limitations section, our estimates may under- or over-estimate the institutional adverse event rates if the records missing data on complications were more likely to be events or non-events, respectively. Importantly, our findings cannot be generalised to all abortions in the region, as a substantial fraction of abortions, both spontaneous and induced, occur outside of the CLAP MUSA Network facilities. Moreover, sentinel centre institutional adverse event rates overstate overall rates of abortion-related complications as they do not include the many safe abortions that occur outside of specialised facilities.

One in six young adolescents in our sample sought care at or past 15 weeks' gestation. The inherent risks of pregnancy, which increase with advancing gestational age, enhance the complexity of legal abortion and post-abortion management in such cases.[29–31] This later care-seeking may be indicative of several distinct concerns, including barriers to young adolescents' timely access to legal abortion and post-abortion care, stigma and shame (or limited knowledge) regarding pregnancy among the youngest adolescents, situations of structural and/or interpersonal violence, requirements for parental consent for care, and physical and economic barriers to accessing the health system in general among the youngest adolescents.[32] Against this backdrop, our findings demonstrate evidence of a clear need to expand access to sexual and reproductive health care and other social services for this particularly vulnerable group of young people.

Additionally, our study provides new and important information about the use of contraception among young adolescents in LAC. Nearly 95% of pregnancies were unintended and over 92% of young adolescents in our sample were not using any form of contraception. While such results are to be expected among a sample of people in abortion situations, an important fraction of pregnancies among young adolescents result from sexual violence.[33] States have legal obligations to protect girls and adolescents from sexual violence and coercion, including that which occurs within the private sphere, and to offer timely and adequate responses when such violence results in pregnancy.[34] Thus, our results underscore the need to ensure child and adolescent health policies and programmes have built-in gender and rights perspectives.

It is also worth noting that these trends exist against a backdrop of low contraceptive usage among young people in the region, with extensive inequities between and within countries.[35,36] The evaluation of quality we conducted found that the CLAP MUSA Network sentinel centres have good coverage of post-abortion contraception,

Table 3. Proportion of cases aligned with WHO recommendations among adolescents aged 10–14.

	Number of cases assessed (denominator)	%
Complete documentation of personal and family medical history[a]	632	91.1%
Complete documentation of laboratory tests conducted[a]	632	85.6%
Complete documentation of the clinical exam (vital signs, clinical exam, gynaecological exam)[a]	632	89.1%
Administration of prophylactic antibiotics		
Appropriate use, according to WHO recommendations	584	70.4%
Possible underuse, according to WHO recommendations	584	21.8%
Possible overuse, according to WHO recommendations	584	7.9%
Use of a recommended uterine evacuation method		
≤ 14 weeks	439	98.6%
≥ 15 weeks	87	87.4%
Cervical preparation conducted, if appropriate		
Appropriate use, according to WHO recommendations	517	76.4%
Possible underuse, according to WHO recommendations	517	6.4%
Possible overuse, according to WHO recommendations	517	17.2%
Provision of post-procedure counselling and guidance		
Basic care	548	100.0%
Warning signs	540	100.0%
Contraception	506	99.8%
Pre-discharge contraceptive initiation		
Contraceptive method initiated prior to discharge	515	68.2%
Contraceptive method initiated if counselling received	502	67.9%
Contraceptive method selected		
IUD	351	13.4%
Implant	351	39.6%
Oral contraceptive	351	7.4%
Injectable	351	35.0%
Condom or other barrier method	351	2.6%
Other/No data	351	2.0%

Source: CLAP MUSA Network SIP-Abortion, 2016–2020.
[a]Composite variables.

and that longer-acting methods (injectable, implant, and IUD) were popular options with young adolescents. Long-acting reversible contraceptives (the implant and the IUD) can be good contraceptive options for this age group, given that they do not require any action on the part of the user and are highly effective at preventing pregnancy.[37] These methods are clinically indicated for adolescents, even very young adolescents, and should be made available to those who request them,[38] with removal services also made widely available to ensure rights are met.[39] Notably, about a third of adolescents aged 10–14 did not initiate a contraceptive method prior to

discharge. A 2019 systematic review found limited evidence regarding effective pre-abortion contraceptive counselling strategies to increase uptake, and even less regarding effective guidance for adolescents.[40] Potentially relevant barriers to contraceptive uptake among this population include denial of services (i.e. due to provider bias), lack of desire to use contraception (due to concerns about side-effects, misperceptions about impact on future fertility, and religious and cultural beliefs), and lack of self-assurance and independence to use contraception (which may be particularly salient for young adolescents).[41,42] Further research is needed to better understand contraceptive decision-making (including capacity for decision-making) among the youngest adolescents. There may be need to, for example, modify contraceptive guidance for young adolescents to better respond to their developmental stage, questions, and concerns, as well as develop additional contraceptive methods that offer better effectiveness and privacy with fewer side-effects. Recognising that early adolescence is a psychosocial phase when abstract thinking is only beginning to emerge, research is needed on how to best align efforts to support informed choice and decision-making with the principle of progressive autonomy.

This study has several important limitations. First, the sample utilised is not representative of the entire region or of the included countries. As mentioned previously, the data analysed here are drawn from a network of sentinel centres specialised in legal abortion and comprehensive post-abortion care. As such, our sample may have a higher prevalence of individuals with complications on arrival than other facilities in each country. Consequently, the rates of institutional pre-procedure complications that we report likely over-estimate the actual prevalence of institutional pre-procedure complications in the region. Given that these sentinel centres are facilities of reference within their countries, it is also possible that they provide higher quality care than is typical, and thus, our findings may underestimate institutional prevalence of both intra-operative complications and near miss.

The second major limitation pertains to the size of the sample used, which has several implications for our findings. Analyses of rare outcomes, such as complications of abortion and maternal near miss, typically require large sample sizes to obtain reliable estimates. Despite the large overall size of the database, the number of cases among adolescents aged 10–14 is relatively small. The size of the sample entirely precluded analysis of maternal mortality, a key outcome and population health indicator. The small sample size may also affect the statistical stability of our estimates. Simulation analyses (for example using Bayesian estimation methods), though beyond the scope of this study, might be used to address this limitation.

The third key limitation, to which we have previously alluded, has to do with data quality. As the data were drawn retrospectively from routine clinical records, rather than a prospectively designed study with data quality monitoring processes in place, data quality is heterogeneous across variables within the database. For our study, this manifested most strongly around the analyses of near miss. The variables used to identify near miss had a large proportion of missing entries. An analysis of missing data (not shown) found that records were not "missing completely at random"[43] – in fact, missingness of near miss information was associated with legal status of abortion and age group, with the highest completeness among adolescents aged 10–14 and in countries with restrictive abortion laws. Our estimates may under- or over-estimate the near miss rates if the records missing data were more likely to be events or non-events, respectively.

Despite these limitations, our analysis contributes empirical findings to the limited literature on the sexual and reproductive health of young adolescents and offers some of the very first empirical data on adolescents aged 10–14 seeking legal abortion and post-abortion care in Latin America and the Caribbean.

Conclusion

With this study, we attempted to shed light on the situation of adolescents aged 10–14 seeking legal abortion and post-abortion care in Latin America and the Caribbean. While the picture is far from complete, our study offers initial insight into the challenges and opportunities facing the public health community in attempting to meet the needs of this vulnerable population. It also outlines several lines of future research on this understudied issue, which can help to contribute to both the scientific literature and to the development of evidenced-based public policy across the region.

Disclosure statement

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Résumé

Les complications de la grossesse sont une cause importante de morbidité et de mortalité chez les adolescentes dans les pays à revenu faible ou intermédiaire. Si les adolescentes les plus jeunes (celles qui sont âgées de 10 à 14 ans) sont considérées comme particulièrement à risque d'effets indésirables, on dispose de peu de données empiriques sur leur santé sexuelle et

Resumen

Las complicaciones relacionadas con el embarazo son una fuente importante de morbimortalidad entre las adolescentes en países de bajos y medianos ingresos. Aunque las adolescentes más jóvenes (entre 10 y 14 años) corren un riesgo particularmente alto de sufrir resultados adversos, hay pocos datos empíricos disponibles sobre su salud sexual y reproductiva. Utilizando un

reproductive. Nous fondant sur un ensemble unique de données tirées des dossiers cliniques obtenus auprès d'un réseau régional de centres sentinelles assurant des avortements légaux et des soins complets pour avortement dans 12 pays d'Amérique latine et de la Caraïbe, nous avons décrit la population d'adolescentes âgées de 10 à 14 ans souhaitant avorter légalement et demandant des soins après avortement et nous avons calculé les taux institutionnels de complications, en utilisant les adolescentes plus âgées (15–19 ans) et les jeunes adultes (20–24 ans) comme groupes de comparaison. Nous avons aussi évalué la qualité des soins prodigués par comparaison avec les recommandations de l'OMS. Près de 17% des jeunes adolescentes (89 sur 533) ont demandé des soins quand elles étaient déjà à 15 semaines de gestation ou plus. Les jeunes adolescentes couraient un risque plus élevé de complications avant ou pendant la procédure que les adolescentes plus âgées et les jeunes adultes, même si la tendance est moins évidente pour les complications les plus graves. En général, la qualité des soins fournis par les centres du réseau était conforme aux recommandations de l'OMS pour un avortement sans risque et des soins complets après avortement. Pris ensemble, ces résultats renseignent sur les difficultés auxquelles fait face la communauté sanitaire mondiale pour garantir la santé et les droits sexuels et reproductifs des adolescentes les plus jeunes, et ils tracent des voies pour de futures recherches, des activités de plaidoyer et la définition de politiques fondées sur les données d'expérience.

conjunto de datos únicos de registros clínicos provenientes de una red regional de centros centinela que proporcionan servicios de interrupción legal del embarazo y atención postaborto integral en 12 países de América Latina y el Caribe, describimos la población de adolescentes entre 10 y 14 años que buscaban servicios de interrupción legal del embarazo y atención postaborto y calculamos las tasas institucionales de complicaciones, utilizando adolescentes mayores (entre 15 y 19 años) y adultas jóvenes (entre 20 y 24 años) como grupos de comparación. Además, evaluamos la calidad de los servicios proporcionados en comparación con las recomendaciones de la OMS. Casi el 17% (89/533) de las adolescentes jóvenes buscaron atención médica cuando su embarazo ya tenía 15 semanas o más de gestación. Las adolescentes jóvenes corrían mayor riesgo de presentar complicaciones pre-procedimiento e intraoperatorias que las adolescentes mayores y adultas jóvenes, aunque la tendencia es menos clara para las complicaciones más graves. En general, la calidad de la atención brindada por los centros en la red estaba alineada con las recomendaciones de la OMS para la prestación de servicios de aborto seguro y atención postaborto integral. Analizados de manera conjunta, estos hallazgos dan una idea de los retos que enfrenta la comunidad de salud mundial para garantizar la salud y los derechos sexuales y reproductivos de las adolescentes más jóvenes, e indican las vías para futuras investigaciones, incidencia política y formulación de políticas basadas en evidencia.