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Full Length Research Paper

Adolescent fertility in selected countries of Latin America and the Caribbean

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This article analyzes the advantages and disadvantages of different sources of quantitative data to measure teenage pregnancy in Latin American and the Caribbean countries. Previous studies discuss how low education, poverty, family background, low expectation of the girls about their future promote the increases in adolescent pregnancy observed in Latin American countries in the last decades. This study provides a comparison of descriptive data on socio-economic and demographic characteristics of girls 15 to 19 years old and specific fertility rate for this group in selected countries in the region, using descriptive analysis of data from demographic and health surveys and from censuses, with emphasis on differences in adolescent fertility and pregnancy and other related indicators by education level, ethnic characteristics, work and access to health services. Results highlight these differences among and inside countries. Internal inequalities and disadvantages in education, labor opportunities, access to health services and poverty are related to higher rates of adolescent motherhood. Differences among countries are linked to the structure of opportunities for youth in rural and urban areas. Finally, the study put emphasis in the importance of increasing the coverage of civil and health registration and health services in less developed countries, to integrate information from different sources, and to generate managerial information for local governments to implement policies to improve the access and quality of health services provided and the register of adolescent motherhood, preventing unwanted adolescent pregnancy and fertility, and to offer an adequate care and protection for teenage girls and their children.

Key words: Adolescent, fertility, pregnancy, reproductive health, census, surveys, civil, health registration.

INTRODUCTION

Adolescent fertility, development and welfare

The largest ever generation of adolescents in history is approaching adulthood in a rapidly changing world, aspiring to a better future. Educational attainment is one of the main policy levers available to lift people out of poverty (Kepinger et al., 1995; Gupta and Leite, 1999; Singh, 2000; Gokce, 2006). Delaying first births can improve the quality of life and educational and employment opportunities for young women, and it is a major long-term factor in reducing the total fertility rate, while social, emotional and economic costs associated with high adolescent pregnancy and fertility rates are considerable, particularly for families and youth, but also for the countries. In the case of adolescents, several studies identified support systems such us family, peers and school mediating the context and individual determinant factors to get pregnant early (Lipovsek et al., 2002; Pereira at al, 2005; Francisco, 2008).

However, some girls and their families who face limited life prospects may see early pregnancy or marriage as a cultural value, or as a form of economic and social security. Without education or employable skills, pregnant girls may be forced to drop out of school and are poorly prepared to take on the responsibilities of childrearing, while facing diminished income prospects.

In Latin America and the Caribbean, the most unequal region in the world, adolescent fertility rates remain constant or even have increased in some countries and periods, while fertility is consistently decreasing in all the other age groups of women. Moreover, early pregnancy is closely correlated with poverty (Baumgartner, 2009;

Gomes, 2007; Magnani et al., 2001). Improvements in data to analyze adolescent pregnancy and fertility are necessary, since data is insufficient, collected mainly from surveys, which sample sizes are insufficient to adequately know the situation of a scarce phenomena, prevalent in a small population group: Adolescent mothers. Moreover, civil registration is incomplete, and poorest adolescents are likely to deliver at home and without the support of trained personnel, and their children are likely not to be registered.

MATERIALS AND METHODS

The method used in this article is descriptive, using and analyzing data from demographic health surveys and censuses from selected countries of Latin America and the Caribbean region. The descriptive analysis on differences in adolescent fertility and pregnancy and other related indicators are presented through the proportions and levels of these events, and particularly the high rates of adolescent fertility by education level, ethnic characteristics, work, poverty and access to health services. Results highlight these differences among and inside countries. However, the discussion of the data presented and of their limitations to analyze events few frequents in smaller groups of the population sample, such as teenager pregnancies and intervals. For example, the number and proportions of adolescents in the total female population of the sample is small, and in surveys with a smaller number of cases, their classification in relevant variables such as a the proportion of pregnant adolescents by individual age, the distribution of married number of children ever born, and the birth interval do not have enough cases to be adequately analyzed. Surveys limitations, such as timing, cross-sectional data and the insufficient number of cases should be overcome with local, daily and integrated information, from censuses, school, health and register services, to integrate the set of information in managerial data bases.

RESULTS

Results from recent surveys in selected countries of Latin America and the Caribbean

Latin American population is very young, and the number of women in reproductive ages doubled between the 1990s and 2010. Although total fertility rate have decreased, the number and proportion of teenage births have been constant, due to the momentum of population growth.

Data from the most recent Demographic Household Surveys indicated that the highest rates of adolescent fertility in the region are observed in the youngest teenagers, in Nicaragua, Guatemala, Honduras, Venezuela, Dominican Republic and El Salvador.

At the time of most recent surveys in selected countries, mothers 15 to 19 varies from 28.0% of the total of teenage girls in Dominican Republic in 2007 (21.8% of adolescent mothers with one child and 6.2% with two children) to 16.1% in Colombia (2010), 14.4% in Bolivia (2008), 11.3% in Guyana (2007), and 10.7% in Peru (2010) (Table 1).

Taking into account only married adolescents, the wide majority of them were already mothers: In Dominican Republic, 66.5% of them had at least one child ever born (49.7% had one child and 16.8% had two children). In Bolivia, 67.9% of married teenagers were mothers (52% with one child and 15.9% with two); in Colombia 63.9% of married adolescents were mothers, and in Guyana they were 53.0%. Data from Table 1 show also the limits of health and fertility surveys to analyze trends in smaller groups, such as married adolescent mothers, who represent less than 40 cases in Guyana and Dominican Republic.

Another risk factor for mothers and children is the very early age of teenage mothers. In Dominican Republic, motherhood occurs in high proportions, at 15 years old; 7.8% of teenager were mothers, and this rate surpassed one out of five teenagers at age 17, when adolescent fertility rates increased considerably to 29.2% at 16 and 36.5% at 17 years old. Until this age, the Dominican girls have a similar pattern to the Guyanan girls. However, due to the shorter birth interval in Dominican Republic, at 18 years old more than a half of the girls were already mothers in this country, while in Guyana only 25% were already mothers at 18.

However, these data should be carefully analyzed, due to in most of the countries there are less than 20 cases of adolescent mothers with a second or more children or pregnancy (Table 1).

In Bolivia and Colombia, only girls aged 18 years have fertility rates above 20% (23.5 and 27.6%, respectively); and in Peru only at 18 years old 19.8% of the girls were mothers, and at 19, 33.5% of them had children.

Birth intervals

The length of time between two successive births is an important public health indicator, since short birth intervals indicate elevate risks of death and morbidity for mothers and children. The ideal length of time between two successive live births is at least 24 months. However, in these Latin American countries, about one out of five teenage mothers had another baby in less than 17 months after the previous child.

This very short and risky birth interval occurred in a significant proportion of births: 28.2% in Bolivia, 25.0% in Colombia, 19.2% in Dominican Republic and 16.1% in Guyana.

A particular and more worrying pattern occurs in Dominican Republic, where girls start early to have children with high rates and with a very short interval to have a second pregnancy and child before the age 19. The most similar pattern is Bolivia, but Bolivian girls started motherhood later than Dominican girls.

In the other extreme, Peruvian girls are mothers with less frequency and have more births within marriage, with longer intervals, and have fewer children before 19 years, suggesting that they adopt family planning.

Table 1. Distribution of teenage mothers, married teenage mothers, pregnant teens and birth intervals.

Parameter	Guyana 2007	Peru 2010	Bolivia 2008	Colombia 2010	Dominican Republic 2007
Percent distribution of women (15 to 19 years) by number of children					
N	***456***	***4278***	***3518***	***9100***	***378***
0	88.7	89.3	85.7	84.2	71.7
1	10.0	9.3	11.8	13.6	21.8
2 and above	1.3	1.4	2.6	2.2	6.2
Percent distribution of married women (15 to 19 years) by number of children					
N	***60***	***480***	***472***	***1249***	***110***
0	47.0	34.2	31.9	36.1	32.5
1	43.7	54.1	52.0	52.0	49.7
2 and above	9.3	11.6	15.9	11.9	16.8
Mean number of children ever born	0.6	0.8	0.9	0.8	0.9
Mean number of living children	0.6	0.8	0.8	0.8	0.8
Birth Intervals (months)					
N	***6***	***65***	***100***	***214***	***26***
7-17 month	-	16.1	28.2	20.5	(19.2)
18-23 month	-	30.6	37.0	33.4	(26.1)
24-35 month	-	38.0	24.7	34.2	(35.1)
36 month and above	-	15.4	10.2	11.9	(19.6)
% of women pregnant at ages between 15 and 19 years (years)					
N	***456***	***4278***	***3518***	***9100***	***378***
15	4.0	2.4	5.1	5.2	7.8
16	13.1	5.1	8.6	9.6	29.2
17	32.6	11.9	18.0	19.1	36.5
18	25.3	19.8	23.5	27.6	54.2
19	20.2	33.5	37.1	38.4	56.1

Source: DHS Measures.

Social inequalities and teenage motherhood

Important socio-economic differences are observed in the percentage of women who have begun childbearing early, according to their place of residence, education and income level.

In Colombia, Bolivia and Peru, the percent of adolescent mothers was much higher in rural areas (26.7, 24.7 and 19.3%, respectively), compared to urban (17.2, 14.4 and 11.2%, respectively). Guyana was a special case, since teenage fertility rates were very similar in the Capital, Georgetown, and in rural areas (13.4 and 14.0%, respectively) (Table 2).

Social differences were more impressive comparing levels of education and income. In Colombia and Dominican Republic, around a half of not educated teenage girls or those with primary education were already mothers; but after secondary teenage fertility rates decreased to 17.9% of girls with secondary and 10.6% of those with higher education in Colombia. In Dominican Republic, rates persisted high even among more educated adolescents: Around 40% of girls with secondary education and 18.5% of those with higher education were already mothers.

In Peru and Bolivia, one out of three adolescents with primary education was mothers. These percents were three times higher compared to mothers 15 to 19 with secondary education, and five times higher than those with the highest level of education. In these countries, inequalities are more impressive, in part due to the levels of teenage fertility deeply decreased among more educated girls, compared to those with completed primary; while in Colombia, education only makes difference to start motherhood for girls who completed secondary, and in Dominican Republic the rates of motherhood only reduce importantly after girls achieved more than secondary education.

A similar trend is observed according to poverty level: Among the poorest adolescent (lowest quintile of income), motherhood is four or five times more frequent,

Table 2. Social characteristics of adolescents who were already pregnant or Mothers.

Parameter	Peru 2010	Bolivia 2008	Colombia 2010	Dominican Republic 2007	Guyana 2007
Social characteristics- Adolescents, 15 to 19 years old who were already pregnant or mothers					
Area of residence					
N	***4278***	***3518***	***9100***	***378***	***456***
Urban	11.2	14.4	17.2	-	13.4
Rural	19.3	24.7	26.7	-	14.0
Total	13.0	28.6	19.5	-	13.8
Level of education					
No education	-	-	55.0	-	
Primary	33.8	32.0	46.5	50.7	
Secondary	11.5	12.6	17.9	40.0	
Higher	6.7	4.3	10.6	18.5	
Level of income					
Inferior quintile	22.4	31.2	29.5	48.3	
Second quintile	19.0	22.9	27.0	36.7	
Middle quintile	12.3	17.7	19.0	16.0	
Forth quintile	10.2	16.3	13.5	15.9	
Superior quintile	4.0	7.8	7.4	0.0	
Employment- Total of adolescents between 15 to 19 years old					
Employment					
n			**9100**		**456**
Currently employed	38.8	38.3	18.5	-	21.0
No currently employed	15.3	10.6	15.3	-	5.7
Not employed for the last 12 months	45.9	51.5	66.2	-	83.5
Studying	-	-	-	-	46.6
Housework, child care	-	-	-	-	18.7
Labor sector					
n			**3076**		**391**
Professional technical	4.5	2.2	2.5	-	16.9
Clerical	4.7	6.1	9.3	-	26.3
Sales and services	35.1	33.7	76.3	-	28.3
Skilled	5.1	9.5	5.0	-	-
Domestic elementary	19.1	15.7	-	-	18.1
Agriculture	28.5	32.0	5.4	-	3.6

Source: DHS Measures.

compared to those in the higher quintile. The highest inequality is observed in Dominican Republic and Colombia, where even the second quintile of income was riskier compared to the middle and further; while in Bolivia and Peru the most important gap is for girls between the inferior and second quintile of income.

Employment among teenagers 15 to 19 years old

Taking into account all the teenagers 15 to 19 years old, the Bolivians have the lowest level of education, compared to girls of the other selected countries. Bolivian and Peruvian girls have also higher rates of employment, 38.8% of them were employed, most of them were working in sales and services or in agriculture, and many are engaged in domestic work.

In the Caribbean countries, Dominican teenage girls have a very low level of education, compared to Guyana. In this last country, girls were more involved in professional labor sectors, such us sales and services, clerical and technical positions.

Table 3. Number of physicians and number of births attended by qualified personal.

Parameter	Doctor	Nurse technician	Midwife	Relatives	No attention	Health service	House	Other
Bolivia	69.8	5.4	3.0	21.2	0.4	72.1	27.4	0.5
Peru	79.4	4.5	9.9	5.7	0.5	84.4	15.2	0.4
Colombia	92.1	2.5	3.6	1.8	0.0	95.7	4.1	0.2
Dominican Republic	70.7	18.2	0.6	-	9.9	95.6	4.4	0

Source: DHS Measures.

In spite of these sub-regional differences, in Bolivia, Peru and Guyana, the percent of teenage girls involved in domestic work does not have large difference, since in all these countries, between 16 and 19% of them were engaged in household chores.

In Guyana, the survey provides additional information: 21.0% of teenage girls were working, but 46.6% were studying, and 18.7% were doing housework and child-care. Taking into account that in Guyana only 11.3% of the female adolescents are already mother or pregnant, this information indicate that adolescents were not dedicated only to care for their own children but also children of other.

Health services

Access to health services is considered a potential element for prevention and attention of adolescent pregnancy and fertility. In Bolivia, 78.4% of women 15 to 19 years old are not affiliated in any contributive social security system; in Peru 48.1% of them are uncovered, as well as 12.9%in Colombia. However, governments provide public health services to unaffiliated population, which explains that the vast majority of births occur in health services and are attended by a doctor or a nurse.

In Colombia and Dominican Republic more than 95 percent of the births of adolescents 15-19 occur in health services and are attended by a trained personal. In Peru 84 percent of adolescent births occur in health services and are attended by trained personal, and in Bolivia these percents are 72.1 and 75.2, respectively. (Table 3)

Censuses and census surveys

Censuses are the primary source of data on population by age group, small areas and demographic changes over time, and for sampling or designing samples for rare events such as births and deaths. Censuses provide the number of adolescent girls, pregnancy and births, by age and sex at the micro, local, state and national levels. These data are also crucial for making estimates from inter-census surveys, for designing samples, for providing the adolescent population count for rate denominators, as well as for government and policies (Bulimic, 1998).

To take advantage of the census opportunities, Brazil has developed census samples with broader questionnaires focused on specific less frequent events in the population, such as adolescent pregnancy and fertility. Census samples estimated progressive and consistent increases in adolescent pregnancy rates, from 7.53 in 1970 to 7.87 in 1980, 8.84 in 1991 and 9.37 in 2000, and this proportion have been constant during the decade, and declined in 2010. In 2006 and 2007 adolescents under 20 years old were responsible for 20.5% of all the births, and rates are higher in the poorest regions of North (Amazonia) and Northeast, compared to other more developed regions. However, in Northeast and Southeast regions, fertility rates at age 15 are three times higher compared to the other regions (IBGE, 2010). Although the Southeast is the most developed region in the country, there were very poor populations concentrated in periphery areas of the metropolis and in the interior of these states.

These results are consistent due to the large size of the census sample. The biannual National Sample Survey of Households (PNAD) covers only 0.2% of the total population, with even weaker representation in rural areas. While the census sample cover 10% of Brazil's cities (more than 15,000 inhabitants) and 25% of the small localities, but is carried out only each for ten years (IBGE, 2000). The smaller surveys are more frequent, and useful to indicate some short-term changes in fertility, since they are carried out every two years (which allow to relate the phenomena to economic trends), while the census samples are implemented every 10 years and reflect more structural changes and provide more precise information at local level.

Information from the census sample has allowed government generating benchmarks to correct the underestimation of adolescent pregnancy and fertility for the entire population and geo-referenced benchmarks by micro, local and national levels, combining information from census samples and specific surveys, and contrasting it to civil and health services registration. In less developed areas, like the Amazonia, where services are scarce; it is assumed that the level of underreporting

is similar to other areas with similar level of development or is similar to similar social and local groups.

Civil registration in Latin American and the Caribbean countries

Improvements in civil and health registration are particularly facilitated in Latin America and the Caribbean countries where most of the births are attended by trained personal. That is the case of Argentina, Brazil, Chile, Colombia, Cuba, Dominican Republic, Panamá, Uruguay, Jamaica, St. Vincent and Grenadines, Antigua and Barbuda and Trinidad Tobago, where more than 95% of births take place in the health services, and data on adolescent pregnancy and fertility are available and reliable. In Brazil, for example, the number of births registered in health services is higher than in civil registration, and these data are used to correct national and sub-national information.

However, in Bolivia, Ecuador, Guatemala, Haiti, Honduras, Nicaragua, El Salvador, Paraguay and Peru, 20 to 40% of births take place at home and child register is not frequent, manly among uneducated, rural and indigenous women. While in the same countries, almost 100% of the more educated, non-poor and non-indigenous women have their births in health services. In these countries, improvements in health and civil registration, particularly at local level, would be very useful not only to generate better information, but mainly to reorient integral policies to prevent adolescent fertility, working with educational sector to promote female education, to care and protect teenage mothers and their children with inclusive policies. Although some of these countries have made efforts to improve civil and health services data such as training midwives to register births, and have promoted no-payment for children registration, results are not satisfactory yet. Therefore, census and surveys still have an important role in providing data to estimate adolescent pregnancy and fertility.

Even in countries with better information have internal inequalities in data coverage and quality. For example, although Brazil has increased the coverage and reliability of information from health services registrations, underestimation persists in rural areas.

All sources of information can be useful to achieve more accurate data on teenage pregnancy and fertility: The census and the census sample, specialized surveys and civil and health services registrations. The combination of different sources contributes to fix and correct the underestimation of adolescent pregnancy and fertility in rural and urban localities, and to provide managerial information to policy makers.

In countries where this combination is not available yet, surveys are reliable data sources to analyze adolescent pregnancy and fertility. The improvement of registration data can also promote results in preventing teenage pregnancy and fertility. For example, in Portugal teenage pregnancy rates have decreased since the mid-eighties after improving health service measures and, according to more accurate indicators and knowledge, reorienting family planning programs to reduce unwanted pregnancies among girls (Pereira et al., 2005).

DISCUSSION

In the selected Latin America and the Caribbean countries analyzed, the total fertility rate have decreased, but the number and proportion of teenage births have held constant or even increased, as was estimated during three decades in Brazil, with a recent decline in the first decade of the XXI Century. The highest rates of adolescent fertility in the region are observed in the youngest teenagers, mainly in the poorest countries, regions and population groups. Adolescent pregnancy occurs earlier in the Caribbean countries, compared to the Andeans, where adolescent motherhood is more frequent within marriage. Sub-regional differences are due to a combination of the culture and timing of early marriage among ethnic and rural populations, but are also related to modern patterns of adolescent behaviors in the Caribbean, without a correspondent level of information, expectations and empowerment in making decisions.

Social inequalities in rural areas, poorest and less educated girls in all the countries multiply the percent of adolescent motherhood in the region, related to the low access to health services. However, even in the countries where almost all births occur in health services, adolescent have had high fertility rates and increases on time.

These factors are beyond pregnancy and motherhood can surround the possibility of studies and to get a productive job among adolescent mothers, who start early their own domestic responsibilities.

Although in most of Latin American and Caribbean countries, the coverage of health services is almost universal, in the poorest countries and in poorest regions in Brazil, more than one out five births take place at home and child register is not frequent, manly among uneducated, rural and indigenous women, in contrast to almost all the births of richer and educated girls, who occur in health services. Even in emergent countries, where the coverage of health services has increased and almost all births occur in these services, disadvantages persist in rural areas and poorest regions. Health services could play a more important role in preventing adolescent pregnancy and in providing more accurate and complex information about the determinants, family and community context where teenage pregnancy occur, and their consequences, as well as in collaborating with education sector, civil registration and with poverty reduction programs to provide caring and attention to these girls and their children.

Health surveys have provided a larger set of questions

and factors that contribute to understand, explain, design and implement policies to prevent early pregnancies and fertility. As adolescent pregnancy and fertility represents few cases in the samples size, and the cost to achieve an adequate number of cases of the phenomena is very high, particularly in developing countries, surveys have been not very frequent in all the countries in the region, and they depend in any case on good census data for an appropriate sample frame.

Recent surveys have been useful to access teenage pregnancy and fertility, and to suggest the needs to generate more specific and relational information, closer to the real adolescent life, to completely understand the multiple determinants of the environment, school, peers and family contexts. Surveys limitations, such as timing, cross-sectional data and the insufficient number of cases should be overcome with local, daily and integrated information, from school, health and register services.

Although surveys and census surveys provide a wide set of variables to analyze individual, family and context factors related to adolescent pregnancy, the extent of coverage of sources and the quality of available data on teenage pregnancy and fertility varies enormously among countries, and efforts have being made by governments in Latin America and the Caribbean to improve the coverage and quality of different sources and thereby to contribute with reliable information to evidence-based policy-making.

Censuses remain an indispensable tool for estimating teenage fertility more accurately. Like most data sources in developing countries, there are significant limitations in using censuses as a basis for current estimates of adolescent fertility. The large period of ten years among censuses, the high cost to include more specific questions to smaller population groups and the need of specialized training to access controversial issues generate difficulties to produce more complex information on teenage pregnancy from census, and undercounting is a key issue limiting the quality of data on that infrequent and controversial event.

Beyond logistical concerns, adolescent pregnancy and fertility is likely to be undercounted due to cultural issues.

1. Interviewers are sometimes afraid to ask about fertility and pregnancy, particularly to younger adolescents 10 to 13 years old and in front of relatives.
2. Younger adolescents may misunderstand or may be careful not to answer questions about pregnancy.
3. Some adults declare their grandchildren as their own children to hide the fact that their daughters are single, adolescent mothers.
4. Children may be under-declared for cultural reasons. Some rural, indigenous or less-educated people in Latin America and the Caribbean believe that small children are not “persons” still, in the way they understand the term, so when the interviewer asks “How many persons live in this household?” the respondents do not count small children.

In these poorest contexts, children are registered only after fulfilling one or two years old.

Specialized surveys use techniques to reduce undercounting of adolescent and fertility pregnancy. Interviewers are always women who receive special training to interview the adolescent directly and confidentially, avoiding the presence of relatives and other members of the household. They use sensitive questions and approaches, games with the interviewees and the like. Although these procedures do not guarantee the elimination of undercounting, they improve reporting and the quality of information in specialized surveys and can provide reliable data for adjusting census data on fertility by age.

Census undercounting can be estimated and reduced also combining data from demographic and health surveys, census samples, and also from civil registration and health services registration.

Census and surveys are complementary and invaluable tools for correcting data and detecting variations in less frequent events, such as adolescent fertility. And geo-referred and integrated data at local level are indispensable for orienting policies and focusing on higher risk population groups, to achieve best results in preventing adolescent pregnancy and fertility, to care and protect them and their children and to promote opportunities for youth.

Civil and health registration of births have low coverage and quality in less developed countries, due to limitations in access and training of officials and health professionnals, combined with cultural values among poorest, rural and indigenous groups. Therefore, some countries have adopted procedures and policies, as well as a combination of sources to know and contrast their underestimation, and to generate reliable data and estimates.

Improving adolescent fertility measures for evidence-based policy-making requires addressing both, logistical and cultural limitations to improve the availability, scope, coverage and quality of information from civil registration, health services data, surveys and censuses.

Conclusions

In Latin America and the Caribbean, teenage pregnancy and fertility persist and even is increasing in some countries, contributing to interrupt adolescent educational and labor development and expectancies, and exposes teen girls to risk conditions associated with abortion, delivery complications and maternal death – particularly poor, undernourished and indigenous adolescents, among them who live in rural areas, poor and less developed states, regions and countries.

Health services, with a large coverage in the region, provide access and registration of teenage and their

children, and represent an opportunity to refine the available information, to generate more complex, integrated and geo-referred information, to access the particular settlements, specific conditions, families, peers and the environment where teenage fertility is resilient and associated to persistent poverty, exclusion, poor education and low opportunities for these girls and their children, as well as to design and implement adequate policies for prevention and protection of these groups.

The integration of objective and subjective indicators, which consider also the perception of adolescents about their decisions and needs, should incorporate the spatial dimension. For it is essential to make improvements in information technology at local level, to organize the set of interrelated components and inputs, from the collection, processing and distribution of information for decision making in public health, education and social policies, to achieve potential impacts in human development, and to take advantages of the demographic bonus in Latin American and the Caribbean societies.

Geo-referenced data about institutional, family, peers, community and environment situations involving teenage pregnancy and fertility can contribute to generating detailed and integrated estimations of its rates and determinants at local level. Improving civil, health and school information to register some characteristics of adolescents, their families and peers, such as race-ethnic origin, family and peer relations, migration and girls decision making process and environment, to support focused prevention, education and protection for youth and their families.

Reconciling more detailed local and administrative data with census data allow governments to estimate sub-national rates to orient local, regional and national policies. Censuses and census samples provide the number of adolescents by age and sex and other socio-demographic characteristics, providing a reconciliation of micro census data with information from health services and civil registration at the local level. However, the production of more detailed institutional data at local level by civil and health services would give more precision to decision-making process.

It is also possible to estimate the probabilities of having an adolescent pregnancy according to geographical distribution, level of education, ethnic group, culture and religion, family structure and composition, income, poverty and other indicators of inequalities available in censuses.

Finally, another important advantage in integrating data from censuses, surveys and administrative registration is adopting a longitudinal and life-course approach, such as indicators on the timings and duration of transitions to adult life, combining data on changes in fertility, education, work and family life on time.

An integral analysis of teenage pregnancy and fertility should take into account socio-demographic, economic, cultural and institutional factors involved in adolescents' perceptions, decisions and practices at individual, family, and neighborhood and environment levels. This ideal approach is possible to achieve in the region, from a combination of available methods and sources of information to fully understanding the trends, timing and diversity of factors involved in the analysis, as well as to identify local needs for specific groups, and to reorient policies of prevention and care.

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