

O-22

## INEQUALITIES IN TEENAGE SEXUAL DEBUT, EARLY MARRIAGE, AND CHILDBEARING IN SUMEDANG WEST JAVA

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### ABSTRACT

Teenage sexual and reproductive health (TSRH) is a serious public health issue in Sumedang, West Java. Nonetheless, due in part to a lack of data, disparities in TSRH have not gotten as much attention as many other primary public health concerns. We look at disparities in important TSRH variables in this research. In order to investigate trends and disparities in teenage behaviors linked to early marriage, childbirth, and sexual debut among adolescents, we examined national household surveys from 26 sub-districts in Sumedang From 2021-2022. The surveys included data from respondents aged 15 to 24. Estimates for the TSRH indicators were obtained by doing survival analyses on every survey. Multilevel linear regression modeling was used to obtain data across Sumedang Regency for all indicators, disaggregated by gender, age, household wealth, urban-rural residence and educational status (primary or lower education versus secondary or higher education). Prior to 2021, 28% of teenage girls in Sumedang were married before becoming 18, and this percentage increased at an average yearly rate of 1.5% between 2021 and 2022. Meanwhile, 47% of females delivered birth before turning 20, a rate that is declining by 0.6% annually. In boys, child marriage is uncommon (2.5%). Before turning 18, 54% of females and 43% of boys, respectively, have their sexual debut. higher for early adolescent indicators (10–14 years old). Significant inequalities have been noted in marriage and childbirth between teenage females from rural to urban settings, as well as between the poorest and richest households. Early marriage, childbearing and sexual debut have increased in Sumedang Regency in the last 3 years, gaps remain or have become larger. In particular, rural, less educated and poorer adolescent girls continue to face higher TSRH risk and vulnerability. Greater attention to gaps in TSRH is needed so that interventions can be better targeted and progress monitored.

**Keywords:** Child marriage, Childbearing, Inequalities, Sexual debut, Teenage

### INTRODUCTION

The global adolescent population (10–19 years) is estimated to reach 1.3 billion (49%: 15–19 years) in 2020, of which more than half will be in developing countries (UN-DESA, 2022). Indonesia is one of the developing countries. On a national scale, the population aged 10 – 24 years is 66.74 million people or 24.2 percent of the 275.77 million total population in 2022 (BPS, 2022). Healthy teenagers are very important for achieving the Sustainable Development Goals (SDGs), including those related to with health, education, poverty, security, and reducing disparities, especially adolescent sexual and reproductive health (TSRH) (Chandra-Mouli *et al.*, 2019)

TSRH risk behavior is associated with unwanted pregnancy, early (often forced) sexual initiation, early marriage, HIV and other sexually transmitted infections (STIs) (Facts, 2021). Early marriage disproportionately impacts girls, while unwanted pregnancies often lead to school dropout and disrupt educational progress and human capital development.(Roy and Sarker, 2013). Early delivery is also associated with increased health risks for the mother and

newborn. In addition, premarital and extramarital sex carries the risk of unwanted pregnancy, which can lead to unsafe abortion, and contracting STIs including HIV (Neal, Channon and Chintsanya, 2018). Many of these risks are greatest in young adolescents, yet most analyzes fail to recognize and report incidence in this age group. Studies show that early marriage and pregnancy are very prevalent among youths from low-income, rural backgrounds, and impoverished families (Sagalova *et al.*, 2021). These findings highlight the persistence of disparities in sexual and reproductive health. Evidence from recent years indicates that adolescent pregnancies and early marriages have decreased, particularly in metropolitan and highly educated populations. Studies indicate that while the percentage of boys and girls who report having their first sexual experience before the age of 15 is quite low, the age at which teens in Sumedang Regency have their first sexual experience has grown (Hegde, Chandran and Pattnaik, 2022).

Policies and initiatives aimed at addressing the needs of adolescents require a deeper comprehension of the problems associated with TSRH. The majority of the information held by today's youngsters is derived from the study of single subjects and aggregate data. To improve our knowledge of TSRH-related concerns, significant adolescent life events—like marrying, having children, and making one's sexual debut—need to be methodically synthesized since they are interconnected. Due to the dearth of disaggregated data on teenagers, policy and program planners are likely unaware of the unique requirements and vulnerabilities that pose a threat to the equality goal of the Sustainable Development Goals (WHO, 2023). This article investigates the discrepancies in TSRH indicators in Sumedang Regency from 2021–2022 in three areas: child marriage, childbearing, and sexual debut.

## METHOD

This study's data came from the Demographic and Health Survey (DHS) for the years 2021–2022 ('Survey organization manual Demographic and Health Surveys Methodology', 2013). A child marriage is defined as a first marriage or consensual union (or living together as if married, henceforth referred to as marriage) before the age of 18, as well as giving birth before the age of 20, which is connected to SDGs indicators such as teenage birth rates and making a sexual debut before the age of 18 (UNFPA, 2023). In order to provide insight into trends and gaps during the early stages of adolescence (10–14 years), we additionally used an age cutoff of 15 years for all three measures.

To get a large sample size, we used data on marital status, childbirth, and most recent sexual debut given by respondent age (e.g., are you now married) and age at first occurrence (e.g., age at first birth) of respondents aged 15–24. We used a Kaplan-Meier survival analysis to account for censoring. This method included accumulating one-year percentage distributions of product limit estimates of survival curves to determine the survival time to encountering each event before a certain age. The survival curves provided us with indicator values (StataCorp, 2021). The cumulative chance of being married before turning 18 and having a first kid before turning 20 is used to calculate the likelihood of child marriage and childbearing. Analysis of gender disparities was done according to socioeconomic position, educational attainment, and urban/rural residency. The analysis for both girls and boys is presented in this publication, but as teenage males are not as likely to get married as girls, we have restricted the disaggregated study to girls alone. Based on the greatest degree of education completed at the time of the interview, respondents' educational status was divided into two groups: primary or less education and secondary or higher education. In order to decrease sampling error, we computed and utilized wealth tertiles using regular DHS dataset index scores instead of traditional wealth quintiles (satoshi Unemura, 2014). Rough estimates of average trends for important variables for Sumedang and sub-regions were derived by conducting mixed-effects multilevel linear regression analyses on survey years, using estimates from survival analysis.

Where possible, a priori information from survey data collected prior to 2021 was utilized to provide more accurate projections for the 2021–2022 timeframe. When evaluating trends, surveys conducted prior to 2021 yield more accurate estimates than polls conducted shortly after 2021 or utilizing the last two data points in 2022. When applicable, we computed confidence intervals for each estimate from 2021 and 2022. We also used a conventional methodology to assess for statistical significance of changes over time and estimated regression coefficients to get the average annual rate of change (AARC). These estimates of confidence intervals and p-values are available for reference in respective tables.

## RESULTS

Prior to 2021, 28% of teenage females in Sumedang Regency were married before turning 18; this is a drop from 35% in 2022, when the average yearly rate was 1.4%. At the age of 18, fewer males (2.5%) were married, compared to 4.4% in 2022 (a 3.6% average yearly rate). After declining by 0.6% year in the last few decades, the percentage of women who became pregnant before turning 20 reached 46.5% in 2023. Prior to turning 18, the percentage of girls and boys having sex dropped from 61 to 54% and 53 to 43%, respectively, in 2021–2022. (AARC:  $-0.7\%$  and  $-1.3\%$ , respectively). The highest percentage of females being married before turning 18 occurs in the districts of Jatinunggal and Buahdua (35% and 29%, respectively, in 2022). By 2022, more than 40% of all subregions will have teenage pregnancies. It is also more frequent for girls in Jatinangor to have their sexual debut before turning 18 (66% versus 58%, respectively). In males, being married before turning 18 happens in fewer than 5% of cases throughout all subregions and is on the decline, but having sex before turning 18 is more prevalent in Jatinangor (58%), where it has increased since 2021. Estimates for early adolescence show that 7.3 and 12% of females before the age of 15 are expected to marry, have children, and have their first sexual experience. It is only possible to predict a boy's sexual debut (marriage is uncommon), which is comparable to the projection of 12% for girls in 2022. The average annual fall rate for all indicators between 2021 and 2022 will be between 1.6% and 2.3%, which is quicker than the overall TSRH indicator. Younger adolescents' subregional patterns matched those of older adolescents' behavior markers. The most notable ones take place when girls and boys make their sexual debuts before the age of fifteen and when females get married.

**Table 1. Levels and trends of child marriage, childbearing and sexual debut among adolescents by sex and sub-region in Sumedang, in 2021 and 2022 (in parenthesis 95% confidence intervals)**

	Before age 18 (20 for childbearing)				Before age 15			
	2021	2022	AARC	p	2021	2022	AARC	p
<b>Marriage</b>								
F	34.8 [25.5, 44.2]	28.0 [18.6, 37.4]	- 1.4	0.32	9.4 [5.9, 12.9]	6.7 [3.1, 10.2]	- 2.3	0.29
M	4.4 [3.4, 5.3]	2.5 [1.0, 4.1]	- 3.6	0.04	***	***	***	
<b>Childbearing</b>								
F	50.9 [47.0, 54.8]	46.5 [42.5, 50.5]	- 0.6	0.12	3.8 [2.5, 5.0]	2.9[1.7, 4.2]	- 1.6	0.38
<b>Sexual debut</b>								
F	60.7 [51.7, 69.7]	54.3 [45.2, 63.3]	- 0.7	0.33	16.7 [11.8, 21.7]	12.3 [7.3, 17.3]	- 2.0	0.22
M	52.7 [43.5, 61.9]	42.8 [33.5, 52.1]	- 1.3	< 0.001	16.1 [12.0, 20.3]	11.6 [7.4, 15.8]	- 2.2	0.13

AARC: average annual rate of change (in percentage), and the minus sign indicates a declining trend; p-values reflect statistical significance of the absolute difference in proportion between the year 2000 and 2015; M male, F female. \*\*\*Data were not analysed due to small sample size

In rural regions, the percentage of females who marry before turning 18 is almost twice as high as in metropolitan ones (35% against 18%). Both giving birth before the age of 20 and making one's sexual debut before the age of 18 were more prevalent (56% and 34%, respectively). (61% and 47%, respectively). The ratio of rural to urban regions and the absolute difference between them either grew or stayed unchanged in 2021–2022, despite a decline in these numbers. Adolescent females in urban regions see a greater annual average fall in marriages and births than do their counterparts in rural areas. Adolescent females living in rural areas were more vulnerable to all three incidents, according to comparable subregional trends for urban-rural residency. Urban AARC exceeds rural AARC in all four subregions and all three youth indices. By 2023, 15% of girls in rural regions and 9% of girls in urban areas would have had their first sexual experience before the age of 15. Girls in rural regions are nearly twice as likely to give birth (4% and 2%, respectively) and are twice as likely to get married before the age of 15 as girls in urban areas (9% and 4%, respectively). There was a reduction in marriage, sexual debut, and childbirth, with a 1.5% annual average decline among girls in both rural and urban regions.

**Table 2. Adolescent girls' marriages, births, and first sexual experiences between 2021 and 2022 according to tertiles for home wealth, education, and urban/rural domicile (in parenthesis, 95% confidence intervals).**

	Before age 18 (20 for childbearing)				Before age 15			
	2021	2022	AARC	p	2021	2022	AARC	p
<b>Marriage</b>								
Overall	34.8 [25.5, 44.2]	28.0 [18.6, 37.4]	- 1.4	0.32	9.4 [5.9, 12.9]	6.7 [3.1, 10.2]	- 2.3	0.29
Rural	41.2 [28.7, 53.8]	35.0 [22.5, 47.6]	- 1.1	0.50	11.5 [6.7, 16.3]	8.7 [3.8, 13.5]	- 1.9	0.43
Urban	24.9 [17.5, 32.3]	18.1 [10.6, 25.5]	- 2.1	0.20	5.9 [3.5, 8.2]	3.8 [1.4, 6.2]	- 2.9	0.24
None or primary	43.6 [34.8, 52.4]	43.4 [34.5, 52.3]	0.0	0.98	12.0 [7.9, 16.1]	10.9 [6.7, 15]	- 0.6	0.73
Secondary +	14.7 [9.1, 20.3]	15.0 [9.4, 20.7]	0.2	0.93	2.3 [0.9, 3.7]	2.5 [1.1, 4]	0.6	0.85
Poorest (33.3%)	44.8 [32.6, 57.0]	39.8 [27.6, 52.1]	- 0.8	0.59	12.7 [7.7, 17.7]	10.2 [5.2, 15.2]	- 1.5	0.49
Middle (33.3%)	37.9 [27.3, 48.6]	29.9 [19.2, 40.6]	- 1.6	0.30	10.2 [6.4, 14]	6.9 [3.1, 10.8]	- 2.6	0.23
Richest (33.3%)	24.0 [17.8, 30.1]	15.7 [9.4, 22.0]	- 2.8	0.06	5.7 [3.6, 7.7]	3.4 [1.3, 5.5]	- 3.4	0.13
<b>Childbearing</b>								
Overall	50.9 [47, 54.8]	46.5 [42.5, 50.5]	- 0.6	0.12	3.8 [2.5, 5.0]	2.9 [1.7, 4.2]	- 1.6	0.38
Rural	58.0 [51.4, 64.7]	56.0 [49.3, 62.7]	- 0.2	0.70	4.7 [2.8, 6.5]	3.7 [1.8, 5.6]	- 1.5	0.50
Urban	40.7 [35.4, 46]	34.1 [28.8, 39.5]	- 1.2	< 0.001	2.6 [1.8, 3.3]	2.0 [1.3, 2.8]	- 1.6	0.31
None or primary	60.8 [56.4, 65.2]	63.6 [59.1, 68.2]	0.3	0.39	5.0 [3.5, 6.4]	4.8 [3.3, 6.3]	- 0.2	0.90
Secondary +	30.2 [23.2, 37.3]	31.2 [24.0, 38.4]	0.2	< 0.01	1.0 [0.6, 1.5]	1.1 [0.6, 1.6]	0.5	0.81
Poorest (33.3%)	61.5 [56.7, 66.3]	61.9 [56.9, 66.8]	0.0	0.92	5.4 [3.5, 7.2]	4.6 [2.8, 6.5]	- 1.0	0.59
Middle (33.3%)	54.7 [50.3, 59.2]	49.9 [45.3, 54.5]	- 0.6	< 0.001	4.0 [2.6, 5.3]	3.0 [1.6, 4.4]	- 1.8	0.35
Richest (33.3%)	37.8 [33.7, 41.9]	29.4 [25.1, 33.6]	- 1.7	0.38	2.2 [1.5, 2.9]	1.5 [0.8, 2.2]	- 2.5	0.19
<b>Sexual debut</b>								
Overall	60.8 [51.7, 69.8]	54.3 [45.3, 63.4]	- 0.7	0.33	16.7 [11.8, 21.7]	12.3 [7.3, 17.3]	- 2.0	0.22
Rural	65.1 [54.3, 75.9]	60.6 [49.7, 71.4]	- 0.5	0.57	19.9 [13.1, 26.6]	15.4 [8.6, 22.2]	- 1.7	0.36
Urban	54.7 [45.7, 63.7]	46.5 [37.4, 55.6]	- 1.1	< 0.001	12.8 [8.6, 17]	8.9 [4.6, 13.1]	- 2.4	0.20
None or primary	68.2 [60.3, 76.2]	67.5 [59.4, 75.5]	- 0.1	0.91	21.0 [15.7, 26.3]	18.8 [13.4, 24.1]	- 0.7	0.57
Secondary +	46.1 [35.6, 56.5]	44.1 [33.5, 54.6]	- 0.3	< 0.001	7.9 [4.7, 11.1]	7.4 [4.2, 10.6]	- 0.5	0.83
Poorest (33.3%)	67.7 [58.7, 76.6]	64.9 [55.8, 73.9]	- 0.3	0.68	21.4 [15, 27.8]	17.5 [11, 23.9]	- 1.4	0.40
Middle (33.3%)	63.3 [53.4, 73.3]	57.3 [47.2, 67.3]	- 0.7	< 0.01	17.6 [12.4, 22.8]	12.9 [7.7, 18.1]	- 2.1	0.21
Richest (33.3%)	51.8 [43.0, 60.5]	42.4 [33.6, 51.2]	- 1.3	0.37	11.8 [8.1, 15.6]	7.5 [3.7, 11.3]	- 3.1	0.11

AARC; average annual rate of change (in percentage), and the minus sign indicates a declining trend; p-values reflect statistical significance of the absolute difference in proportion between the year 2021 and 2022. Secondary + refers to completed education level reported as secondary or higher

The TSRH indices of the wealthiest and poorest families differ significantly. In 2021, compared to 16% and 29% in the wealthiest counties, over 40% of females in the poorest regions were married before becoming 18 and 62% had their first kid before turning 20. In the poorest regions, there was little to no change in the number of weddings and births among teenage females between 2021 and 2022 (AARC: -0.8% for child marriages and 0.0% for childbirths). The number of children fell by 1.7% annually while child marriages fell by 2.8% annually among the wealthiest categories. As a result, there are growing differences between the wealthiest and poorest populations in terms of child marriages, adolescent pregnancies, and sexual debuts. In the poorest regions, there is limited development among females in subregions that exhibit a similar trend. The difference between the richest and poorest girls increased in all four subregions as girls in the richest areas made gains in all three TSRH metrics. Similar findings applied to younger adolescents: girls from the poorest homes showed greater prevalence rates and a slower rate of decrease than girls from the wealthiest households. In terms of child marriage, childbearing, and sexual debut at age 18, the absolute differences in 2022 between females with elementary education or less and those with secondary education or more will be 28%, 32%, and 23%, respectively. Almost three times as many as those with a tertiary education (15%) were married by the age of 18, with 43% being married by then. By the age of 20, 64% of them had had their first child, which is twice as many as females who had a tertiary degree. When it comes to marriage, the difference in education between urban and rural areas of residence and wealth level is larger than the difference in other two variables. Based on affluence and place of residence, trends vary. Between 2021 and 2022, there is minimal to no change in any of the schooling categories. For all three measures, the average annual rate of change was less than or equal to 0.3%. The district pattern overall and the subregional pattern are comparable. Compared to females with secondary or higher education, girls with elementary or lower education have a greater likelihood of getting married and having their first child before turning 15. In 2023, compared to 2.5% and 1% of women with university education, 11% of women aged 15–24 with only a primary education were married before turning 15 and 5% of them had their first child before turning 15. Subregional differences in marriage and childbirth rates are consistent with these findings. The marriage and childbirth rates for young women aged 15-24 with primary or no primary education range from 4% to 14%, with these percentages being stable throughout subregions. Generally speaking, no educational group showed any signs of a reduction in any of the three markers of early adolescent conduct.

## DISCUSSION

We observed major progress in TSRH outcomes across the Sumedang Regency region, along with a decrease in the overall prevalence of child marriage, childbearing, and sexual debut during 2021–2022 among adolescent girls and boys in the early and late adolescent periods. However, large geographic disparities within and between sub-regions persist, and are characterized by large gaps in urban-rural differences and gaps in socio-economic characteristics. The increasing and persistent long-term gaps in TSRH indicators indicate the importance of TSRH as a public health issue in the region. In particular, adolescent girls living in rural areas and the poorest households reported higher prevalence rates when compared with more advantaged urban and wealthier adolescent girls. Early child marriage and childbearing before the age of 15 decreased more markedly in younger adolescents (before the age of 15) than in late adolescents, this may be due to multi-sectoral efforts to increase girls' access to basic education as observed over the last few decades (Chandra-Mouli *et al.*, 2017). However, our research shows that in 2022, almost 7% of girls in Sumedang Regency still report that they are married, 3% gave birth to their first child, and 12% had their first sexual intercourse before the age of 15. This is worrying because the risk of maternal and infant mortality is greatest for

girls under 15 years of age, and there are often too few resources aimed at younger adolescent girls (Ely and Driscoll, 2023)

Our research confirms that the TSRH transition occurred in most of Bandung Regency, although there are large differences between some regions. In some regions, marriage is more common among girls than boys and about half of girls report having children by 2022. Sexual debut before age 18 follows the same pattern for girls and boys. Research has shown that the prevalence of child marriages and unplanned pregnancies in most areas of Bandung Regency is partly caused by social factors such as poverty, cultural norms and traditional attitudes (Sinha *et al.*, 2013). Although many countries have made efforts to reduce child marriage, such as implementing or reforming minimum age laws for marriage and anti-child marriage campaigns, our research results show that child marriage still continues, especially in rural areas (UNICEF, 2020)

Our analysis, which identifies any gaps that still exist, can help preventative efforts by supplying vital information that helps programs attain their target enrollment. An rise in premarital sex is suggested by the larger drop in child marriage than in sexual debuts before the age of 18, a phenomena that has been previously studied in several Bandung Regency regions. In many countries with marked socioeconomic disparities, as other research has demonstrated, access to modern contraception and other TSRH services for sexually active, single adolescents is a problem. This is highlighted by the slower decline in child birth rates among adolescent girls when compared to marriage and sexual debut (Bongaarts, Mensch and Blanc, 2017)

Adolescent females who belong to the poorest family wealth groups compared to the richest groups are more likely to marry young and have children in rural regions than in urban ones. This disparity is seen in every subregion and keeps growing over time. These negative trends imply that the already vulnerable poor and rural girls are the focus of an increasing amount of the damages associated with these outcomes. Unfair access to healthcare and education is probably a significant issue. Increased focus on TSRH among rural and impoverished children is required in order to make progress toward national and international goals like the SDGs, which aim to "leave no one behind" (Rebouças *et al.*, 2022). Research on trends in schooling reveals a variety of patterns. Girls with lesser education (primary school or below) experience earlier sexual debut, marriage, and childbirth, similar to differences between affluent and poor and urban/rural areas (Shen, 2020). School dropout may be influenced by marriage and having children, and girls who do not attend school may have higher marriage and pregnancy rates (Rani and Akmam, 2022). While overall trends for all females, regardless of educational status, were declining for all three TSRH indicators during 2021–2022, TSRH indicator trends were either constant or growing for both education categories. The sole explanation for this is the significant change in the percentage of females from low-education to higher-education categories between 2021 and 2022. It has been demonstrated elsewhere that variations in age at first marriage, first sex, and first birth are, in fact, mostly caused by these shifts in educational attainment.

Early marriage and delivery have detrimental effects on young women's and children's social and psychological well-being, as well as their health, which are permanent (Chowdhury and Hossain, 2023). Child marriage compromises a person's future possibilities and prospects and violates their freedom to make educated decisions. Teens who start dating young are also more likely to become pregnant unintentionally, have an abortion, and contract STIs like HIV (Ali and Cleland, 2018). Girls who get married young or become pregnant are more likely to drop out of school, which will limit their possibilities in the future.

The growing disparity between adolescent pregnancies and early marriages emphasizes the necessity of a multisectoral strategy to enhance TSRH. In order to stop early marriage and childbirth in the area, it is imperative that gender-sensitive policies and programs be put in

place that allow all girls, especially the poorest ones, to continue their education. This will encourage delayed and choice marriage and childbearing. Girls who attend school are less likely to become pregnant unintentionally, get HIV and other STIs, and experience numerous physical, psychological, and social benefits. They also have potential to enhance the socioeconomic standing of their families in the future. According to the available data, it is crucial to understand that, in the majority of Sumedang Regency's teenage female population, policies only focused on banning child marriage might positively affect one-third of these girls.

## CONCLUSION AND SUGGESTIONS

Along with notable urban-rural and socioeconomic gaps, early marriage and childbirth among young and older teenage girls and boys has declined in Sumedang District, however there are still significant subregional discrepancies. In 2021–2022, there was a rise in the disparity between females living in rural and urban regions, as well as between the wealthiest and poorest households. This increases the losses for communities that are already at risk. As far as we are aware, our research offers one of the most extensive and thorough analyses of the differences in TSRH, encompassing marriage, childbearing, and teenage sexual debut, among the youth of Sumedang District. In order to implement the SDG 2030 equality goal and reach all teenage girls and boys, disaggregated data on adolescents is crucial. More focus and action are required to overcome the significant and enduring disparities found in this study. Increased political will, funding, and youth involvement in the creation and execution of policies and programs—with a focus on multisectoral and life skills-oriented approaches in the context of social, cultural, and structural domains are necessary for future success in the field of TSRH.

## ACKNOWLEDGMENTS

We are grateful that the author received complete moral and material support from the faculty of Padjadjaran University's Doctoral Medical Study Program and Bhakti Kencana University's Institute for Research and Community Service (LPPM) in order to conduct this well-organized research.

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