California's Most Vulnerable Parents

A Cross-Sectional Study of Birth Rate Trends among Girls in Foster Care

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This study produces birth rate estimates for 15 to 17 year-old female youth who spent time in foster care between 2006 and 2010. Results indicate that although only a small number of female foster youth gave birth, the rate of childbearing among 15 to 17 year-old female foster youth was significantly higher than female youth in the general population of Los Angeles County. Comparisons with sociodemographically similar teens in the county were not possible. Female youth who were in foster care for shorter periods of time and experienced greater placement instability were more likely to give birth. Among girls who were in foster care and gave birth – roughly half became pregnant before entering care.

INTRODUCTION

Although the national birth rate for girls aged 15–19 fell to a historic low of 31 births per 1,000 in 2011,[1] teen birth rates in the United States remain high among industrialized countries[2] and teen parenting continues to be a significant public health problem.[3] Adolescent parenting is associated with diminished physical health,[4] higher incidence of depression,[5] and limited educational and vocational success.[6] Health, social, and educational challenges are also well documented among children born to adolescent mothers.[7,8] Early childbearing is also associated with an elevated risk of maltreatment among children of adolescent mothers.[9,10]

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Because various prevention efforts have succeeded at reducing unintended pregnancies among adolescents in the general population,[2] prevention efforts are now shifting toward particularly high-risk groups, including youth in foster care.[11,12] This targeting appears to be warranted as rates of pregnancy and birth among teens in or recently exited from foster care are substantially higher than in the general population.[13–17] Yet, current knowledge is limited by the absence of epidemiological data concerning birth rates for the full population of girls in foster care, birth rate trends over time, and foster care experiences that may be related to a heightened rate of birth. In this study, we linked foster care and vital birth record data to calculate and characterize annual birth rates for girls placed in foster care in LA County.

BACKGROUND

Adolescent childbearing is associated with various demographic and social characteristics[3,18] and disparities in teen birth rates are evident across both race and socioeconomic status.[19,20] In 2011, teenage mothers in the United States were more likely to be Black or Latina than White, although birth rates for Blacks and Latinas have declined more sharply during the last 20 years than have birth rates among White teens.[1] Adolescent mothers are also more likely to be from low-income families[21] and high-poverty neighborhoods.[22]

Adverse childhood experiences also contribute to higher rates of early parenting.[23] Physical abuse, especially when it occurs during preschool and elementary school, can increase the risk of childbearing during adolescence.[24–26] Sexual abuse that occurs during childhood and into adolescence has emerged as a risk factor for teenage pregnancy and childbearing.[27–29] A meta-analysis found that girls who experienced childhood sexual abuse had more than twice the odds of teenage pregnancy than those who did not.[30] Another study found that girls who experienced either childhood sexual abuse or neglect experienced higher rates of adolescent childbirth than their nonmaltreated counterparts.[31] Lastly, maltreatment that occurs during adolescence, particularly neglect, has been found to significantly affect the odds of teen pregnancy.[32]

Consistent with studies that have established a relationship between maltreatment and teen pregnancy and births, research has also suggested that girls in or exiting from foster care may be more likely to become pregnant and give birth as teens than those in the general population.[14–16,33] Dworsky and Courtney[14] found that half of the girls in their 3-state Midwest sample had been pregnant by age 19 compared to one fifth of a nationally representative sample of the general population. Additionally, approximately 32% of girls in foster care in this same Midwest sample reported that they had given birth before age 20.[13] In an analysis of foster youth in Maryland, the birth rate was calculated at 93 per 1,000, a rate 3 times higher than the state's overall teen birth rate.[16]

Research to date has been hampered by difficulties in measuring the number of births to girls in foster care; this limitation can be partially addressed through linkage of CPS data and vital birth records.

Findings from studies that have assessed rates of teen parenting among maltreated girls under the supervision of the child protective services (CPS) system have been mixed. One study found that among teen girls involved with CPS, 1 in 6 were either pregnant or parenting.[15] Another examined the risk of teenage childbearing among those on the margin of foster care placement and found that the birth rate among girls placed in foster care was significantly higher than for girls who remained at home with their families.[34] Other studies have found no statistical differences in the rate of teen pregnancy and births between maltreated girls who remained in their home and those placed in foster care.[35,36]

Mixed findings concerning teen pregnancy and birth rates among girls in foster care likely reflect geographic variations, secular trends, and different inclusionary criteria. Studies based on point-in-time estimates of girls in foster care who give birth fail to capture all girls who give birth in a single year because not all teen mothers remain in care while pregnant or after giving birth. Additionally, such estimates may miss adolescents who exit care just prior to giving birth or those who enter care just after giving birth. Surveys of a small but meaningful population of foster youths who reach the age of majority while still in care may also be potentially biased because many children, even adolescents, exit care for other reasons prior to emancipation.[37,38]

Research to date has been hampered by difficulties in measuring the number of births to youth in foster care; this limitation can be partially addressed through linkage of CPS data and vital birth records.[39] There have been no U.S.-based studies that have used population-based birth record data to measure the rate of childbearing among girls in foster care, nor any that have examined whether there are characteristic foster care experiences associated with rates of birth. The current study used linked data to estimate the annual incidence of births among girls who were placed in foster care in Los Angeles. The incidence of births was examined across time (2006–2010) and stratified by race/ethnicity and foster care placement variables.

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METHODS

DATA SOURCES

Child protective service records for girls in foster care in Los Angeles between 2006 and 2010 were extracted from California's child welfare case management system. CPS records were available through a longstanding data-sharing collaborative with the California Department of Social Services. Vital records capturing all births occurring in California between 2006 and 2010 were obtained from the California Department of Public Health. Personally identifiable maternal information from the birth records was extracted for all teen mothers who gave birth when they were 15–17 years of age. This information was used to match CPS and birth records to identify girls in foster care who gave birth.

Record linkages were completed using probabilistic matching software that established matches based on a combination of identifiers common to both data sources. Match status cut-points for designating a record pair as a match or nonmatch were determined through an extensive examination of linked records. All record pairs falling above the upper cut-point were automatically deemed a match; record pairs below the lower cut-point were deemed nonmatches. A clerical review of pairs falling between the lower and upper thresholds was used to assign the final match status for remaining record pairs.[40] The final dataset generated from these linkages included all girls 15–17 years of age in Los Angeles County's foster care system between 2006 and 2010 and documented who gave birth during each year. The linkage and analysis of these data fell under state and university institutional review board protocols and was reviewed by the California Vital Statistics Advisory Board.

RATES

To generate annual teen birth rates among girls in foster care, we specified a base population denominator that included all girls 15–17 years of age who were in an active foster care placement during each year between 2006 and 2010. Of those girls in foster care during a given year, the numerator included those who gave birth at any point during that same year. As such, this numerator consisted of three groups: (1) girls who gave birth during the year and were in foster care at the time of birth; (2) girls who gave birth during the year after exiting foster care; and (3) girls who gave birth during the year before entering care. Given the size of the base population of girls in foster care, we report a birth rate per 100.
For comparative purposes, an overall general population teen birth rate was calculated based on a numerator derived from vital statistics records for mothers who were 15 to 17 years of age at the time of birth. A denominator reflecting the annual counts of 15- to 17-year-old girls in the county was estimated based on data available from the California Department of Finance.[41,42] Estimates of state birth rates calculated for this study may differ slightly from other published rates. Differences arise because denominators for birth rates published by the California Department of Public Health[43] were derived from population data available in 2010, while in this study we use revised intercensal population estimates released in 2012.[41]

VARIABLES

To investigate variations in teen birth rates among girls in foster care, we stratified our data by race/ethnicity and four variables measuring placement-related experiences frequently encountered in the foster care literature and correlated with various outcomes: (1) episode length, (2) placement stability, (3) number of foster care episodes, and (4) placement type.[14,44-46]

Since girls could have had more than one episode in foster care in a given year, variables characterizing girls' foster care experiences were coded based on a defined focal episode. For the base population of girls in foster care (denominator), the last episode during the year was specified as the focal episode in care. For girls who gave birth while in foster care, the focal episode was defined as the episode during which the birth occurred. For girls who gave birth after leaving foster care, the focal episode was defined as the last episode prior to exit. For those who gave birth and then entered foster care, the focal episode was defined as the first episode upon entry into care following the birth.

Episode length was calculated for our base population/denominator by subtracting the entry date for the focal foster care episode from the last day of placement if there was an exit from care, or the last day of the year if there was no exit. For our numerator of girls in foster care who gave birth during each year, the episode entry date was subtracted from either: (1) the date the youth gave birth if a birth occurred during the episode or (2) the episode end date if the birth occurred after the episode. Births occurring prior to the start of an episode were excluded from this rate stratification. Episode

length was then coded as a four-level categorical variable (less than 12 months, 12–23 months, 24–59 months, and 60 months+).

Placement stability was also generated from information corresponding to the defined focal episode and was coded as a four-level categorical variable based on the number of placements as of the last day of the year, the date each youth gave birth, or the episode end date (1–2, 3–4, 5–8, 9+). As was true for episode length, the subset of girls who gave birth and then entered care was not examined by placement stability. We also constructed a dichotomous variable indicating whether the focal episode was a first or a repeat episode in foster care. Because California transitioned to a new child protection data collection system in 1998, CPS records prior to this date were only available for girls who had an open placement record at the time of the new system conversion or entered thereafter. As such, this variable should be considered a conservative estimate of multiple episodes in care.

For the base population of girls in foster care, placement type was generated from the focal episode. For those who gave birth while in care, placement type was coded based on the placement as of the date the birth occurred. For those who gave birth after leaving foster care, placement type was based on the last placement during the focal episode. For those who entered care after giving birth, placement type was coded based on the first placement after entry (kin or relative home, nonrelative foster home, congregate care, guardian homes/other). Our final category was comprised largely of guardian homes, with much smaller proportions of girls in preadoption placements or court and tribe-specified homes. We additionally produced general population and foster care birth rates stratified by race/ethnicity. We focused our analysis on the three largest racial/ethnic groups (Black, Latina, and White). We coded race/ethnicity based on first identified race and a Latino ethnicity indicator, as recorded in vital birth records (for the general population) or CPS records (for the foster care population).

We also examined foster care status at the estimated date of conception among girls who gave birth. The date of conception was calculated based on gestational age as recorded in the birth records. The estimated date of conception was then subtracted from the date the birth occurred. The resulting date was used to determine whether or not a girl who gave birth was in an active foster care placement when she became pregnant.

RESULTS

PLACEMENT CHARACTERISTICS

Table 1 presents annual teen birth rates (per 100) for 15- to 17-year-olds between 2006 and 2010. These teen birth rates were computed for girls: (1) in the general population of Los Angeles and (2) who were in foster care at some point during each year. For the population of girls in foster care at some point during the calendar year in which they gave birth, we provide further birth rate stratifications by placement-related variables.

On average, girls in foster care gave birth at marginally higher rates than adolescent girls in the general population (3.5 per 100 vs. 2.2 per 100). Although on a relative basis, the teen birth rate of girls in foster care was higher (59%), the actual count of girls in foster care who gave births was quite small; in any given year, no more than 4.0% of 15- to 17-year-old girls gave birth during the same year they were in foster care. Across the 5 years of data examined, general population teen birth rates declined consistently and substantially by nearly 23.5%, from 2.4 per 100 in 2006 to 1.8 in 2010. Birth rates among girls in foster care peaked in 2007 and then declined more modestly by about 12.1% through 2010.

Girls who experienced the greatest instability (9 or more placements) had far higher birth rates than those who experienced less instability.

Notable differences in birth rates for girls in foster care emerged across variables capturing placement-related experiences. A graded relationship between foster care episode length and birth rate was observed, with rates of birth higher among girls who had been in care for shorter periods of time. The birth rate of those in care for less than 12 months was more than twice the rate for those in care for 60 months or more. Additionally, birth rates among girls in foster care for longer periods of time (24 months or more) have decreased over time, while births to girls in placements for less than 12 months has increased by 18.1% between 2006 and 2010.

Placement stability was also related to the likelihood of giving birth: girls who experienced the greatest instability (9 or more placements) had far higher birth rates than those who experienced less instability. Birth rate differences by episode count were less consistent. Across years, there were few differences between girls in their

TABLE 1

Births to Girls Age 15–17 in a Los Angeles County Foster Care Placement During the Year: General Population Comparison, Average Birth Rate 2006–2010, Birth Rates by Year, and Distribution by Placement-Related Experiences

	2006-2010	2006		2007		2008		2009		2010	
	Average Rate	Births	Rate	Births	Rate	Births	Rate	Births	Rate	Births	Rate
	per 100	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*
General Population (LA)	**2.2**	5,208	2.4	5,347	2.4	5,102	2.3	4,590	2.2	3,940	1.8
Foster Care During the Year	**3.5**	155	3.5	171	4.0	134	3.3	130	3.4	107	3.1
Episode Length											
Less than 12 months	**4.1**	35	3.4	57	5.4	42	3.9	39	3.6	41	4.1
12-23 months	**2.6**	20	3.0	21	3.2	12	2.0	13	2.1	16	2.6
24-59 months	**2.5**	27	3.5	23	2.8	19	2.2	16	1.9	13	1.8
60 months +	**2.0**	44	2.3	38	2.2	30	2.0	23	1.8	20	1.8
Placement Stability											
1-2 placements	**2.5**	39	2.0	58	3.0	41	2.2	45	2.6	38	2.4
3-4 placements	**2.3**	22	2.1	31	3.1	21	2.4	12	1.4	16	2.1
5-8 placements	**2.7**	29	3.3	24	2.8	19	2.4	19	2.5	16	2.4
9+ placements	**4.7**	36	6.5	26	4.9	22	4.5	15	3.1	20	4.4
Episodes in Foster Care											
First episode	**3.3**	88	3.3	104	3.9	84	3.3	69	2.8	66	2.9
Second episode +	**3.8**	67	3.8	67	4.0	50	3.3	61	4.4	41	3.3
Placement Type											
Kin Foster	**3.3**	54	3.8	61	4.6	33	2.9	23	2.3	24	2.6
Non-Kin Foster	**4.4**	60	3.9	71	4.5	73	4.5	83	5.0	60	4.1
Congregate Care	**4.8**	29	5.0	30	5.9	18	4.3	19	4.7	17	3.9
Guardian/Other	**1.0**	12	1.4	9	1.0	10	1.1	5	0.7	6	0.9

Notes: Denominator for each year is the count of girls in foster care during the year in Los Angeles: 2006=4,425; 2007=4,325; 2008=4,069, 2009=3,817; 2010=3,477. Each covariate rate is computed for the focal episode and the denominator is the corresponding characteristics of all girls in care during the year. Episode Length and Placement Stability variables not calculated for girls entering care after giving birth.

first episode in foster care compared to those in repeat episodes. The lowest birth rates were consistently observed among girls placed in guardian homes and other placements. The birth rates to girls in these placements were far lower than the next lowest group, which were girls placed in relative foster homes. On average, 3.3% of those placed with kin gave birth. Girls placed in nonrelative foster homes and congregate care settings tended to have the highest birth rates over all 5 years (4.4% and 4.8%, respectively). Between 2006 and 2010, birth rates of girls in nonrelative foster homes increased while the rate among girls in congregate care decreased.

RACE / ETHNICITY

Table 2 presents general population and foster care birth rates for the three largest racial/ethnic groups. Across all groups and in all years, Latina adolescents had the highest rates of birth. Compared to Latina adolescents in the general population, those in foster care had a birth rate that was roughly 42% higher (4.6 per 100 vs. 3.2 per 100). Latina teenage girls in both the general population and in foster care also had substantially higher birth rates than their Black and White counterparts. Births rates to Black adolescent girls followed similar patterns: those in foster care had higher rates of birth than those in the general population (30%) and Black adolescents had consistently higher rates of birth than White adolescents. Although White adolescents had the lowest birth rates overall, an examination of within-group differences produced the most notable rate disparities between those in foster care and those in the general population: the birth rate of White adolescents in foster care was 5 times the rate of White adolescents in the general population. Over the 5-year study period, birth rates to White adolescents in foster care averaged 2.0 per 100 while birth rates to White adolescents in the general population averaged 0.4 per 100.

The birth rate of White adolescents in foster care was 5 times greater than the rate of White adolescents in the general population.

TABLE 2

Birth Rates (per 100) by Race/Ethnicity: Los Angeles County General Population vs. Foster Care Population

	2006-2010	2006		2007		2008		2009		2010	
	Average Birth Rate	Births	Rate	Births	Rate	Births	Rate	Births	Rate	Births	Rate
	per 100	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*	*n*	*per 100*
General Population (LA)											
Latina	**3.2**	4,439	3.6	4,585	3.6	4,383	3.4	3,934	3.0	3,404	2.6
Black	**2.0**	465	2.1	461	2.1	457	2.1	411	2.0	333	1.7
White	**0.4**	213	0.5	209	0.5	161	0.4	163	0.5	136	0.4
Foster Care Population											
Latina	**4.6**	87	4.6	111	5.8	81	4.3	87	4.6	63	3.6
Black	**2.6**	51	2.7	50	2.8	43	2.7	34	2.4	33	2.6
White	**2.0**	14	2.6	10	1.9	9	1.9	5	1.3	7	2.1

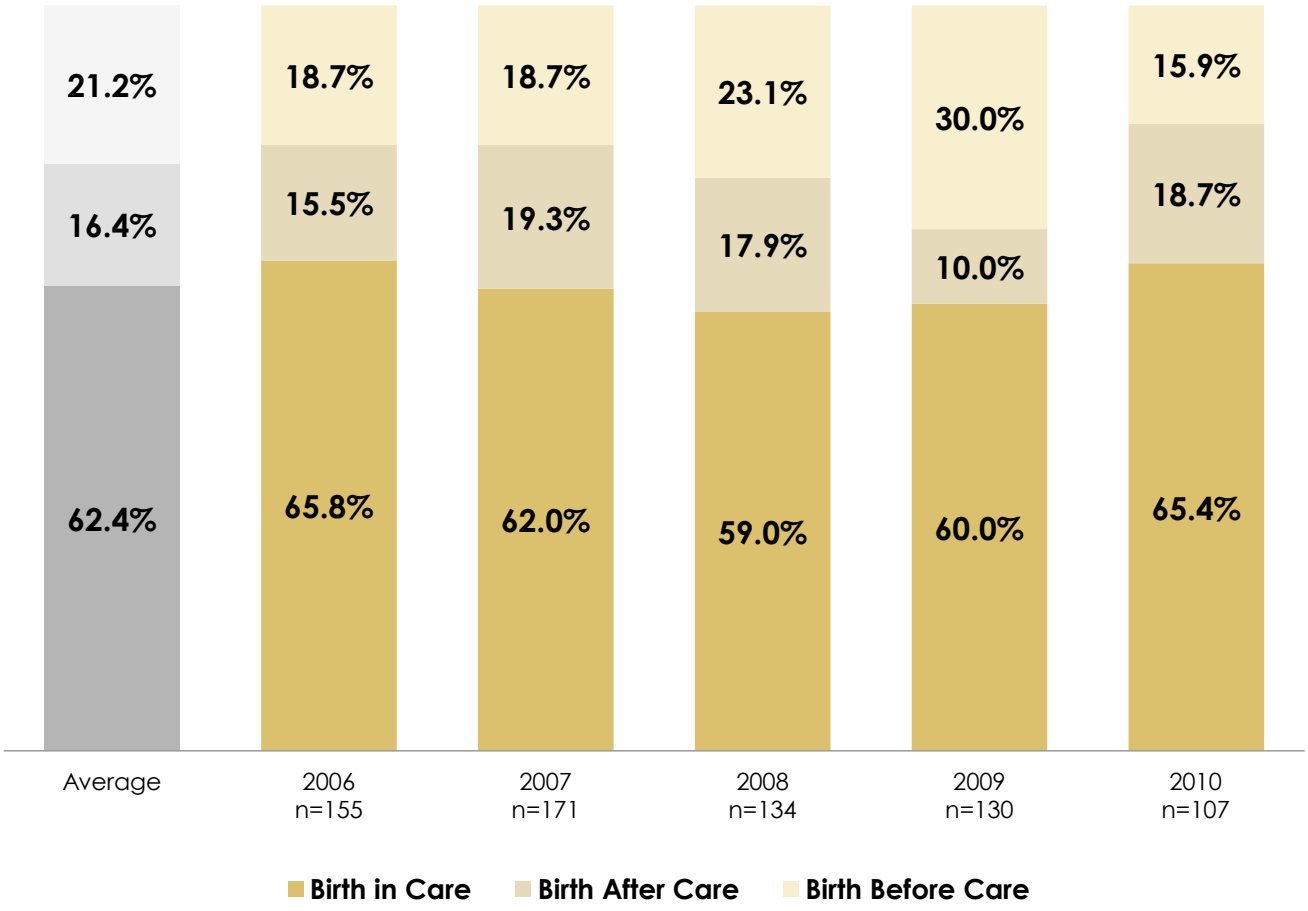
Notes: Denominator for each year is the count of girls in foster care during the year in Los Angeles: 2006=4,425; 2007=4,325; 2008=4,069, 2009=3,817; 2010=3,477.

PLACEMENT STATUS AT BIRTH

Among girls in foster care who gave birth during the same year as they were placed in foster care, births could have occurred before, during, or after the foster care placement. Figure 1 presents the average and annual percentages of 15–17 year olds who gave birth during an active foster care placement, after exiting foster care, or prior to entering foster care. Although the distribution of these three groups varied by year, on average a majority (62.4%) of girls in foster care who gave birth during the same year as their placement did so during an active foster care episode. The remaining girls who gave birth the same year they were placed in foster care were divided between those who gave birth after exiting foster care (16.4%) and prior to entering foster care (21.2%).

FIGURE 1

Girls Placed in Foster Care who Gave Birth During the Year: Percentage who Gave Birth while in Foster Care, After Leaving Foster Care, and Before Entering Foster Care, Los Angeles County 2006–2010

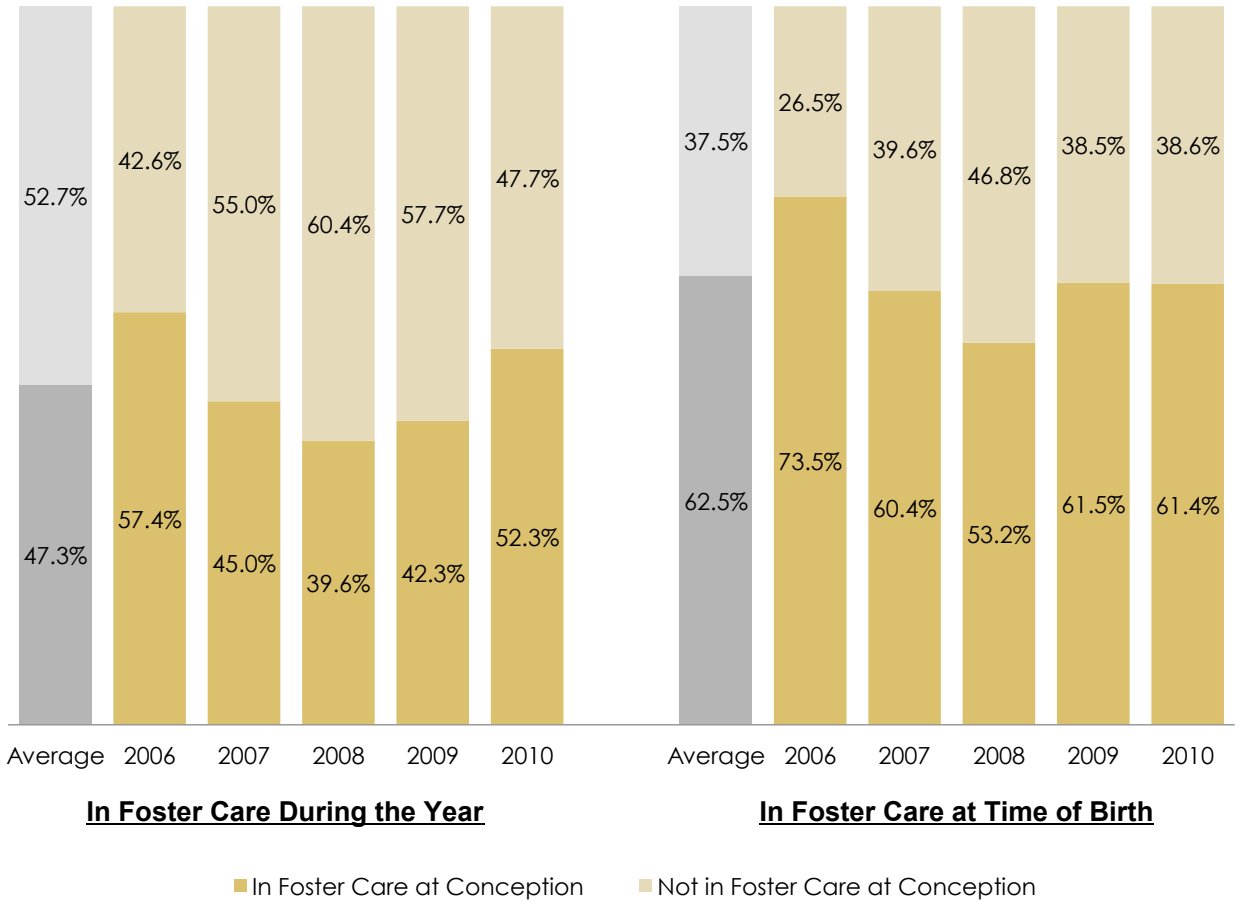


PLACEMENT STATUS AT CONCEPTION

Just as the timing of births and foster care placement varied, so too did the relationship between date of conception and foster care placement. Figure 2 presents the percentage of girls who were in an active foster care placement on the estimated date of conception (by year). Although foster care placement status at conception fluctuated over time, there were no significant trends during the study period. On average, among girls in foster care at any point during the year in which they gave birth, slightly more than half became pregnant outside of care (vs. 47.3% in care at the estimated date of conception). Among girls who gave birth while in foster care, the average percentage who became pregnant during an active foster care placement was higher (62.5%).

FIGURE 2

Foster Care Status on Estimated Date of Conception: Percentage of Births to Girls Placed in Foster Care during the Year and Who Gave Birth While in Care, Los Angeles County 2006-2010



DISCUSSION

SUMMARY

This was the first U.S. study to use population-based vital birth records to examine the annual incidence of childbirth among adolescent girls in foster care. Findings partially confirmed previous research by indicating that the birth rates among 15- to 17-year-old girls in foster care are higher than among similarly aged girls in the overall population. This is not surprising; girls who are placed in foster care represent a very distinct sociodemographic subset of LA's adolescent population, defined by many familial and environmental risks associated with heightened rates of teen births. Girls who gave birth in any given year represented, in absolute numbers, a very small percentage of the full population of 15- to 17-year-old girls in foster care during the year.

BIRTH RATE DIFFERENCES

Findings from the present study also documented that the rate of childbirth among teens in care varies across a range of factors related to foster care placement, including episode length, placement stability, and placement type. Among girls who gave birth either while in foster care or shortly before entering or exiting a placement, several variables emerged as noteworthy correlates. Our finding that placement stability was associated with birth rates is consistent with a large body of research that has demonstrated a relationship between placement insta-

bility and adverse adolescent outcomes, including pregnancy.[14,48] This finding also comports with qualitative research that suggested girls in foster care who choose to give birth do so because they believe that parenting will provide a sense of stability, increased attachment and permanence, and the opportunity to be successful in ways their own parents and the foster care system were not.[12,49]

A substantial proportion of girls entered or reentered foster care when they were already pregnant (over 50%) or after they gave birth (15.6%), which suggests that circumstances surrounding the pregnancy or birth may have factored into the placement decision.

Some of the lowest birth rates observed across covariates emerged among girls who had been in foster care for 5 or more years. In contrast, those who entered care as adolescents and stayed in care for less than 1 year gave birth at markedly higher rates. This aligns with previous research that has demonstrated that children entering care as adolescents are at greater risk of emotional difficulties and behavioral problems[50] and that maltreatment occurring during adolescence increases the risk of early pregnancy.[32] Additionally, our data indicated that a substantial proportion of girls entered or reentered foster care when they were already pregnant (over 50%) or after they gave birth (15.6%), which suggests that circumstances surrounding the pregnancy or birth may have factored into the placement decision.

Birth rates also varied by race/ethnicity. Both Black and Latina girls in foster care were consistently more likely to give birth than their White counterparts. Although these racial differences were diminished relative to those observed in the overall teen population, the persistence of teen birth rate disparities by race is notable given that children placed in foster care reflect a much more sociodemographically homogenous subpopulation.[47]

TRENDS

There was a marked decline in the overall Los Angeles birth rate for 15–17 year olds. A less striking decline was observed among girls in this age range who were in foster care during the same year they gave birth. Although the more modest birth rate declines among girls placed in foster care likely reflect an adverse selection of girls who are either pregnant or at acute risk of becoming pregnant into the foster care system, these data underscore opportunities to develop and target prevention services to an identified population of teens at high risk of a first or repeat birth.

LIMITATIONS

Despite this study's strengths in size and its unique use of population-based birth record data to generate new epidemiological information concerning births among girls in foster care, there are several limitations that must be considered. First, we were unable to produce population birth rates for sociodemographically similar youth in Los Angeles. As such, we can only make general population comparisons, even though children placed in foster care have a distinct risk profile. Second, errors and incomplete data are inherent to large-scale administrative data and affected our ability to successfully match vital birth records to CPS data. We linked records using a probabilistic methodology coupled with an extensive clerical review. Although this approach has been deemed superior to deterministic matching for records without unique and verified identifiers,[40,51] it is unknown how many girls should have been matched but were not.

Third, this was a cross-sectional examination of 15- to 17-year-old girls placed in foster care. Although we attempted to crudely characterize longitudinal aspects of girls' foster care placements (e.g., episode length), differences observed in the rates of birth across covariates cannot be causally interpreted. For example, we were unable to determine whether placement instability contributed to an increased adolescent birth rate among girls in foster care or other factors contributed to both high levels of placement instability and teenage pregnancy. We did not assess the timing or reasons for disruptions in placement, including whether placement instability preceded pregnancy, or how those moves affected placement type during adolescence. We also did not account for the full history of placement types, but rather only examined the placement at the time of birth, at the end of the focal episode, or at entry into care, which limited the conclusions we could draw from the risk associated with where adolescent girls are placed.

FUTURE RESEARCH

This study provided the first population-level examination of the epidemiology of teenage childbearing among girls in foster care and prompted various questions that can and should be addressed in future research. First, future work should use longitudinal data to assess the relationship between placement dynamics in foster care and the timing of both conception and birth. Research should also include an examination of reasons for placement moves, particularly the impact and timing of disruptions. Second, although this study focused on births that occurred during a foster care episode or during the same year as a placement in foster care, an assessment of the effect of foster care placement on the likelihood of births throughout adolescence and outside of this discrete window is needed. Third, future research should investigate well-being outcomes for adolescent girls who give birth while in foster care, including placement-related changes, exit outcomes, and future contact with CPS either for themselves or their young children.

CONCLUSIONS

Recent advocacy efforts in California (California Senate Bill 528) and across the nation have designated girls in foster care as a particular focus of teenage pregnancy prevention. In addition to their greater risk of teen birth, their involvement with public child protection systems means that maltreated foster youth are an accessible high-risk population to whom enhanced prevention services could be delivered. This study generated epidemiological data that can be used to inform the targeting of prevention and intervention resources to girls involved with child protective services. It also provided baseline data that can be used to evaluate the success of such efforts over time.

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