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Family Histories and Teen Pregnancy in the United States and Canada

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Abstract

Objective—This study took a long view of childhood experiences that can contribute to the risk of teen pregnancy in the U.S. and Canada, two countries with different norms and policies surrounding family life and inequality.

Background—Teenage pregnancy is a major life experience arising from life course trajectories unfolding over a young woman's childhood. Cross-national comparisons can elucidate family-based pathways while embedding youth within broader national contexts of the U.S. and Canada, which are similar in some respects yet different in others.

Method—Longitudinal data from the U.S. NLSY79 Young Adult Survey ($n = 3,122$) and the Canadian NLSCY ($n = 2,517$) connected childhood histories to teenage pregnancy. Competing risk models estimated the risk of teenage pregnancy with family structure changes and episodes in poverty during childhood.

Results—Teenage pregnancy, family change, and poverty were more common in the U.S. In the U.S., only multiple experiences of instability and poverty were associated with greater risk of teenage pregnancy, but, in Canada, any experience of childhood disadvantage was associated with elevated risk.

Conclusion—The risk of teen pregnancy was higher among both U.S. and Canadian adolescents from more unstable and economically insecure families, and that link between cumulative experiences of childhood disadvantage and adolescent pregnancy was stronger in Canada.

Implications—Policies and interventions to reduce teen pregnancy must address childhood socioeconomic disadvantage.

Keywords

Adolescent pregnancy; cross-national; family structure; panel studies; poverty

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Teen pregnancy is a discrete event precipitated by proximate circumstances—an adolescent girl gets pregnant at a specific time as a result of current sexual activity. Yet, like all life course transitions, this event is embedded within much longer behavioral and experiential trajectories that arise out of particular social contexts (Mollborn, 2017). As such, understanding teen pregnancy is facilitated by approaches that are both dynamic and contextualized, especially when dynamic means a long view extending back to birth and contextualization connects the ecological settings of everyday life (e.g., families) to broader societal settings that shape opportunities, norms, and values (e.g., nations of residence) (Crosnoe & Johnson, 2011).

In this spirit, this study examines adolescent girls' risks of becoming pregnant in the context of their lifelong family histories, defined by continuity and changes in their family structures and experiences of poverty from early childhood through adolescence. This contextualization of teen pregnancy is then compared between two countries (the U.S. and Canada) that share many similarities but differ in rates of teen pregnancy and in other important ways (e.g., policy regimes, economic inequality, demographic diversity). The first hypothesis is that more unstable and economically insecure family histories will raise the risks that girls will become pregnant by the end of adolescence, followed by hypotheses about whether this pattern will be more pronounced in the U.S. or Canada. These hypotheses are tested with multi-generational U.S. data from the National Longitudinal Survey of Youth 1979 cohort (NLSY79) and its associated NLSY79 Young Adult Survey, which followed the children of the women in the original study, and comparable Canadian data from the National Longitudinal Survey of Children and Youth (NLSCY).

The significance of this research is that teen pregnancy is a life course phenomenon of great interest to the public and a major target of policy and programmatic intervention, despite the fact that actual rates of teen pregnancy are nowhere near as high as they were decades ago and are falling in many developed countries, including the U.S. and Canada (Darroch, Singh, & Frost, 2001; Kearney & Levine, 2015; McKay & Barrett, 2010; Sedgh et al., 2015). This concern is fueled by evidence of the short- and long-term social, psychological, physical, and economic outcomes of adolescent mothers and their children, which confirms widely-held beliefs that teen pregnancy is a social problem that needs to be addressed even as it has been criticized by some as causally suspect (Geronimus, 2003; Hoffman & Maynard, 2008; Luker, 1996). This contested nature of teen pregnancy and its associated literature necessitate inquiry into how it emerges across time and place. This study, therefore, takes a long view of the experiences in childhood that can contribute to the risk of pregnancy in adolescence, comparing that link between two countries with different norms and policies surrounding family life and inequality.

Teen Pregnancy within the Life Course

Pregnancies among adolescent girls represent only a fraction of all pregnancies in developed nations but draw an inordinate amount of attention. At 57 pregnancies per 1,000 girls age 15–19, the U.S. has a higher incidence of teenage pregnancy than most other industrialized Western countries, including Canada, which has a teen pregnancy rate one half that of the U.S. at 28 per 1,000 (Sedgh et al., 2015). Notwithstanding far higher rates of teen pregnancy

in the U.S., both Canada and the U.S. have experienced a downward trend which has led to historically low teen pregnancy rates in each country (Hamilton & Mathews, 2016; McKay, 2012). This downward trend can mostly be explained by increased use of effective contraceptive methods (Darroch et al., 2001; Lindberg, Santelli, & Desai, 2016). In other words, teen pregnancies are down in general because more Western teenagers are effectively contracepting. U.S. teenagers, however, are more likely to become pregnant because their use of contraceptives is lower than that of their peers in other countries and because they use less effective methods, even though they are not more likely to be sexually active.

The reason these pregnancies draw such attention in countries like the U.S. and Canada is that they are thought to lead to a host of negative outcomes for both adolescent mothers and their children. This public perception is empirically grounded. After all, teen mothers and their children face educational, economic, social, and relational disadvantages compared to older mothers and their children. Teen mothers have lower educational attainment and incomes later on in life, spend more time as single parents, and are more likely to break up with their children's fathers (Diaz & Fiel, 2016; Kane, Morgan, Harris, & Guilkey, 2013). Their children tend to have poorer physical health (e.g., low birth weight), academic progress (e.g., lower test scores), and socioemotional development (e.g., behavior problems) (Coyne & D'Onofrio, 2012; Wolfe & Rivers, 2008). Those effects, however, may downplay the role of selection into teen pregnancy through family background. The literature directly testing for selection suggests the need to study selection into teen births more closely. Within-family studies of sibling and cousin pairs strongly indicate family background has more influence over young women's and their children's lives than the direct effect of having a child as a teenager (Geronimus & Korenman, 1992; Geronimus, Korenman, & Hillemeier, 1994). Similarly, quasi-experimental methods that treat miscarriage and age at menarche as instrumental variables reveal non-significant effects of teen pregnancy on higher education (Hotz, McElroy, & Sanders, 2005; Ribar, 1994). We take a new approach to selection: whereas fixed effects studies and experiments aim to isolate or net out certain factors, this study instead describes the selection processes at work.

Life course theory offers two major insights into how to approach the selection of girls into becoming pregnant in adolescence. First, the theory advocates for situating short-term transitions within long-term trajectories. In other words, transitions may occur as the culmination of experiences that unfold over long periods of time, necessitating a long view rather than a narrow window. Second, the theory encourages the contextualization of both transitions and trajectories within social environments and institutions spanning micro-level processes, such as interpersonal relations and local environments, up to macro-level forces, such as cultural, economic, and political structures (Elder, Shanahan, & Jennings, 2015; see also Crosnoe & Johnson, 2011). Our purpose is to use these insights of life course theory to elucidate why some adolescent girls get pregnant and otherwise similar girls do not; specifically by conceptualizing the family context as an experiential trajectory within a national context.

Family Structure, Poverty, and Teen Pregnancy

One long view of ecological settings of adolescents' development is tracing their family's histories back to the earliest years of their lives. For example, evidence in the U.S. and Canada shows that the link between adolescents' current family structures and developmental outcomes, including those related to teen pregnancy, is largely a function of their family structure histories back into childhood (Fomby & Cherlin, 2007; Strohschein, Roos, & Brownell, 2009). Consider a study by Cavanagh, Crissey, and Raley (2008) revealing that cumulative family instability was more predictive of adolescent romantic involvement than was current family structure. Earlier work by Wu (Wu, 1996; Wu & Thomson, 2001) applied the family change hypothesis to young women's romantic and sexual relationships: above and beyond the effects of point-in-time family structure as well as current/past household income, family instability was associated with greater risk of a premarital first birth, and, for White women, earlier sexual initiation.

Although children are often remarkably resilient to adversity (Garmezy, 1991; Werner & Smith, 1982), family instability can produce chronic or intermittent stress among parents and children, disrupt household routines through the entry and exit of parent figures and other children, and strain parent-child relationships. Any or all of these consequences may undermine parental monitoring of adolescents, exacerbate their risk-taking propensities, and encourage them to seek validation and support in other relationships. In addition, unstable family structures are both consequences and causes of economic instability (McLanahan, 2004). As a result, youth who experienced multiple family structure changes growing up are also likely to have experienced economic hardship, causing further disruptions to adolescents and their parents that could result in risk-taking (Amato, 2010; Fomby & Sennott, 2013).

Indeed, continuous or repeated experiences of family poverty over long periods can be highly developmentally disruptive to young people, regardless of whether they are currently experiencing family poverty or not. After all, most families do not remain in poverty continuously but rather go in and out of poverty (Blank & Schoeni, 2003; Burton, Phipps, & Zhang, 2014), which is why adolescents may be in poverty at one point in their early life courses even if they are not currently (and vice versa) (Duncan & Rodgers, 1988). As a result, family histories rather than point-in-time conceptualizations of poverty better capture the developmental risks that adolescents face. For example, examining family income histories has shown that young people who are not technically in poverty may have worse mental and physical health than other youth not in poverty if they had experienced poverty growing up (Kendzor, Caughy, & Owen, 2012; Strohschein, 2005). Moreover, family poverty has a cumulative effect, so that the more time that adolescents spent in poverty growing up, the more likely they are to have mental or physical health problems (McLeod & Shanahan, 1996; Strohschein & Gauthier, 2017).

Drawing inspiration from these studies, we contend that more expansive family histories offer the potential to deliver new insights in teen pregnancy research. Previous studies from the U.S. (Kim, 2014; Manlove, Ikramullah, Mincieli, Holcombe, & Danish, 2009; Meade, Kershaw, & Ickovics, 2008;) and Canada (Al-Sahab, Heifetz, Tamim, Bohr, & Connolly,

2012; Fairthorne, Hanley, & Oberlander, 2017) have shown that family background is strongly associated with the risk of teen pregnancy and childbirth; most of that literature, however, uses single point-in-time measures of family structure and socioeconomic status (Singh, Darroch, & Frost, 2001; Wildsmith, Manlove, Jekielek, Moore, & Mincieli, 2012). One exception also analyzed the NLSY79-YA to investigate the transition to parenthood based on family instability and father absence (Hofferth & Goldscheider, 2010), but our study of teen pregnancy is one of the first to explore a more detailed view of family instability and poverty experiences throughout childhood. In this life course perspective, therefore, multiple family structure changes and spells of poverty over long periods are cumulatively disruptive to individual resources and adult controls/supports that protect adolescents from risk-taking. Consequently, the first aim of this study is to test the hypothesis that higher levels of family structure instability and economic insecurity from childhood through adolescence will increase the odds that adolescent girls will become pregnant.

National Context, Family Histories, and Teen Pregnancy

Following our life course framework, children can be contextualized within family histories, which can be contextualized within the societies in which they unfold. The U.S. and Canada offer an interesting comparison, which we make through the lens of structural and cultural hypotheses. As suggested by Bachrach (2014, p. 2), “culture and material conditions exert interdependent and complementary influence on the behaviors that drive demographic change.” This study, therefore, contributes to demographic and family research on teen pregnancy with a cross-national comparison of two neighboring Western countries that differ in key ways.

Structurally, the U.S. and Canada share the longest international border in the world, and they have highly developed economies and are major economic partners. Both countries can be characterized as having liberal social policy regimes, which, in stark contrast to many other developed countries, is oriented around market rather than government approaches to social welfare (Epsing-Anderson, 1990; Kamerman & Kahn, 1997; Prince Cooke & Baxter, 2010). Despite these similarities, the child poverty rate is historically higher in the U.S. than in Canada (Smeeding & Thévenot, 2016), as is the level of income inequality (Ross et al., 2000; see Smeeding, 2005). Moreover, although both countries spend lower proportions of their Gross Domestic Product on social programs than many rich countries (Organisation of Economic Cooperation and Development, 2014), the U.S. has a weaker social safety net than Canada. For example, Canada has universal health care and family paid leave policies, both of which the U.S. lacks, as well as more generous income supports for the poor (Kamerman & Kahn, 1997; Paitnik, 2015). The Canadian sector-based health care system does not necessarily include coverage of all prescription drugs, such as birth control pills, but universal health care coverage promotes women’s health more generally and helps address unequal access. Thus, child poverty, income inequality, and social safety nets are aspects of stratification that can disadvantage those on the bottom of the hierarchy in myriad ways, including by destabilizing families and foreclosing opportunities (Conger, Conger, & Martin, 2010; McLanahan, 2004). A structural hypothesis suggests that the greater

disadvantage and inequality of the U.S. translates into a stronger link between family background and teen pregnancy in the U.S. than in Canada.

Another point of comparison between the U.S. and Canada is the cultural perspective that reflects different norms about family, fertility, and sex. Both the U.S. and Canada are characterized by falling fertility rates and rising median age of first birth, as well as more traditional norms about marriage and fertility compared to many other Western countries. Greater stratification in the U.S., however, contributes to higher prevalence of divorce and nonmarital fertility (which are factors in family instability) as well as teen pregnancy. Experiences of poverty and family instability during childhood and pregnancy during adolescence are, thus, more normative among young people growing up in the U.S. compared to their Canadian counterparts. As a result, experiencing either is less likely to be exceptional or to make them stand out among or feel different in their local communities. The overall lack of comprehensive sex education and lower condom use in the U.S. (Darroch et al., 2001; Lindberg et al., 2016) also differentiate the circumstances of sex and reproduction. A norms-based hypothesis suggests that Canadian young women may be more resilient in the face of setbacks growing up, such as family structure changes or spells of poverty, because they have more access to knowledge and protections that enable them to avoid unwanted or mistimed pregnancies.

The second aim of this study, therefore, is to examine whether the links of family structure changes and spells of family poverty with teen pregnancy differ in magnitude between the U.S. and Canada. Although a thorough empirical investigation of mechanisms is outside the scope of this study, we hypothesize that structural and cultural norm-based factors will come together to differentiate those links in ways that disadvantage U.S. young women and families and advantage Canadian young women and families.

Methods

Data and Sample

The U.S. data source, the NLSY79-YA, was developed in stages by the Bureau of Labor Statistics (BLS). First, the NSLY79 began with a nationally representative cohort of adolescents in 1979 and followed them into adulthood. Starting in 1986, the children of female NLSY79 respondents were interviewed biennially as the Children of the National Longitudinal Survey of Youth (C-NLSY). Beginning in 1994, those children were filtered into young adult surveys (the NLSY79-YA) once they were 15 years old. Young adults were interviewed biennially, with the 2012 wave the latest available at the time of our analyses ($N = 7,999$). Given our focus on teenage pregnancy, we included respondents who were 13–19 years old at any point from the first child survey in 1986 to the latest wave of the young adult survey in 2012. The resulting analytical sample consisted of 3,122 young women who were born between 1973 and 1993 to mothers who were participants in the original NLSY79.

The Canadian data source, the NLSCY, was based on a survey conducted biennially by Statistics Canada between 1994 and 2008. The survey tracked a nationally representative cohort of Canadian children who were aged 0–11 at the initial interview in 1994 until they

were aged 14–25 when the study concluded in 2008. Respondents were identified using a multi-stage probability sample design that excluded families residing in remote regions, First Nations reservations, and institutions. Because questions about teen pregnancy were asked of young women once they reached age twenty, our analytical sample was necessarily restricted to young women who were aged 6–11 at initial interview, leaving 2,698 young women who contributed at least one observation in the risk period of ages 13–19. A small amount of missing information on variables of interest resulted in a final sample of 2,517 respondents born between 1983 and 1988.

The selection of the NLSY79-YA over other U.S. data sources with adolescents was motivated by the similarities between it and the NLSCY. The NLSY79 child and young adult surveys and the NLSCY both track children's development over time using similar measures reported by mothers and, when they were old enough, children themselves. Indeed, the BLS (1998) describes the NLSCY as the most appropriate direct comparison to the NLSY79-YA. Whereas data sources such as the NLSY 1997 cohort, National Longitudinal Study of Adolescent to Adult Health, and Education Longitudinal Study began in adolescence and followed respondents into young adulthood, the NLSY79-YA and NLSCY began in childhood and followed respondents through adolescence and, for many, into young adulthood. As a result, extensive concurrent information about respondents' family backgrounds was available as opposed to retrospective reports later in life. Furthermore, although interviews for both surveys were conducted biennially, the NLSY79-YA and the NLSCY included information on the specific points in time at which certain events occurred, such as participants' experiences of teen pregnancy and their mothers' ages at the time of their birth.

Measures

Teen pregnancy—In the first NLSY79-YA survey in 1994, young women reported if they had ever been pregnant and if so, at what age they first became pregnant. In subsequent waves, previous respondents provided updates on whether they had been pregnant since the last interview and if so at what age, and new respondents who were filtered into the survey once they turned 15 years old provided initial information about ever being pregnant and if so when. Our coding scheme gave priority to U.S. respondents' initial self-reports of a pregnancy by relying on the earliest data, thus eliminating issues that could arise from conflicting reports. These data were collapsed across all survey waves from 1994 to 2012 into a continuous variable for age at first pregnancy. Once NLSCY respondents reached the age of 20, they were asked if they had ever been pregnant and, if so, at what age they had first become pregnant. Based on reported age of first pregnancy in both datasets, we constructed seven indicators of the occurrence of pregnancy during teenaged years, with respondents entering the risk period at age 13 and exiting at age 19. Dropping out of the study after age 13 but before age 19 and reaching age 19 without a teen pregnancy were treated as censoring events. Exposure to teen pregnancy was coded across those seven variables as 0 if the adolescent did not have a teen pregnancy at that age, 1 if she did have a teen pregnancy at that age, and 2 if she was censored or not in the survey at that age.

Family structure histories—Constructed variables reflected family structure at birth and the number of changes in family structure from birth to age 13, before the teen pregnancy exposure window. In the U.S., these variables came from the reports of mothers in the NLSY79 on their relationship status (no spouse or partner, spouse, partner, some other status) at each wave. The Canadian variables were derived from maternal reports of family structure history from the birth of the focal child to the first wave, as well as her union status (single, never married; cohabiting; married; or other) at each wave and changes in family structure since the prior wave. We used data from the year in which U.S. adolescent respondents were born and retrospective marital status at birth in the Canadian survey to create a measure of maternal union status at birth (1 = single, 2 = married, 3 = partnered/cohabiting). To capture family structure changes across childhood, we counted changes in maternal union status between waves in both surveys from birth through age 13, representing the number of times mothers' partners entered and exited the household. Based on the distribution of those variables (few respondents in either sample experienced more than 2 changes), we collapsed the count variables: dummy variables identified children who remained in the same family structure from birth to age 13 (i.e., no change), experienced only one change, and experienced two or more changes.

Poverty histories—Household poverty status was measured in the 12 month period prior to each survey wave. U.S. poverty measures were calculated by the BLS based on family income, household size, and national poverty income guidelines derived from estimates of food expenditures adjusted for inflation. Canadian poverty measures were calculated by Statistics Canada using low-income cutoffs (LICOs) that represent estimated thresholds below which a family is likely to spend significantly more of its income on food, shelter and clothing than the average family. LICOs are annually adjusted for inflation, as well as family size and community size. Poverty status in both countries, therefore, measures relative rather than absolute poverty, which is meaningful in wealthy societies where few exist at the level of subsistence and common when conducting cross-country comparisons (Smeeding & Thévenot, 2016). The U.S. data included poverty information from the adolescent girls' birth, whereas the Canadian data collected it only between 1994 (when respondents were between the ages of 6 and 11) and 2008. To create comparable measures for each national context, counts of episodes in poverty during childhood combined poverty indicators starting with the U.S. survey wave in which respondents were 6 years old up to when they were 13 years old and across all waves of available data for the Canadian survey (i.e., ages 6–13). As was done for the measures of family structure history, those continuous count measures were collapsed into dummy variables that identified children in households that were poor in two or more waves, in only one wave, and in no waves.

Covariates—To account for potential confounds, we constructed the following sets of sociodemographic covariates. Three covariates captured characteristics of young women's mothers that are known to be associated with both teen pregnancy and histories of family structure and poverty: maternal teen birth (1 = girl's mother was under age 20 at the time of her birth, 0 = not), maternal college completion (1 = highest grade completed greater than 16 in U.S. and postsecondary degree or diploma in Canada, 0 = lower), and maternal nativity status (1 = born outside of U.S. or Canada, 0 = native-born). Several additional covariates

were measured for girls and their families, including child age, region (for U.S., 1 = South, 0 = Northeast, North Central, or West; for Canadian, 1 = eastern provinces and most populous provinces of Quebec and Ontario, 0 = western provinces), and urbanicity (1 = urban at age 13, 0 = suburban or rural at age 13). The U.S. models also included a series of dummy variables for race/ethnicity (Latina, Black, or the reference group of White) given that teen pregnancy is significantly more common among U.S. young women of color (Kearney & Levine, 2012).

Plan of Analyses

Competing risks models estimated time to teen pregnancy, with censoring as the competing risk due to survey attrition. The wide format data used to describe the overall sample and respondents who did or did not experience a teen pregnancy were transformed into long format, with time-invariant independent variables (birth statuses, family structure and poverty histories, and covariates) predicting time-varying transition into teen pregnancy across the window of 13–19 years old. Tables present competing risk coefficients and their exponentiated values, which represent the relative risk of a transition, for the focal event of teen pregnancy (results that modeled time to attrition are available upon request). To test whether coefficients significantly differed between the U.S. models and the Canadian models, the final step of analysis was to conduct Z-tests:

$$Z = \frac{\beta_{US} - \beta_{CA}}{\sqrt{(SE(\beta_{US}))^2 + SE(\beta_{CA})^2}}$$

where Z = test statistic for equality of coefficients, β_{US} = coefficient from U.S. model, β_{CA} = coefficient from Canadian model, and SE = standard error. U.S. models were estimated in Stata using the *mi estimate* suite of commands with 10 imputed datasets on a maximum of 35% missing on several covariates that are similarly controlled for with the maternal inverse propensity score weights (region, urbanicity, and maternal education) and a minimum of 2% missing on several focal independent variables (episodes in poverty, changes in family structure).

Both surveys require the use of sample weights to account for sampling designs and maintain representativeness, but weighting worked differently across the two datasets. First, because young adults in the U.S. sample were filtered into the NLSY79-YA once they were 15 years old and were children of women from NLSY79 age cohort, girls from earlier waves of the NLSY79-YA were born to younger mothers. To adjust U.S. estimates to correct for that bias, we included a measure of maternal age at the respondent's birth, as outlined in the measures section, and also used inverse propensity score weights. Because young adults' mothers began their age cohort study in 1979 and were on average 18 years old at the initial survey, weights estimated whether young adults were born before 1979 using mothers' race/ethnicity, immigrant generational status, geographic region, urbanicity, number of siblings, maternal age at birth, and parental college education. The inverse propensity score weights were used as model weights (Robins, Hernán, and Brumback, 2000; Robins and Rotnitzky, 1995; Robins, Rotnitzky, and Scharfstein, 1999) in all analyses of the U.S. data, and they were calculated as:

$$\omega(t, x) = \frac{t}{e(x)} + \frac{1-t}{1-e(x)}$$

where ω = weight, t = treatment (an early birth, i.e., born before 1979), and $e(x)$ = the propensity score of receiving the treatment (i.e., propensity to be an early birth). We combined each girl's inverse propensity score weight with her normalized NLSY79-YA survey weight.

Second, all analyses of Canadian data were weighted using the Wave 1 normalized weights. As with the conventional NLSY79-YA sampling weights, these weights took into account non-response and differential probabilities of selection into the sample as a result of the NLSCY complex survey design. Although there are debates about the inclusion sampling weights in multivariate models (e.g., Winship & Radbill, 1994), we found them important to include so that the estimates produced by these non-linear models signified nationally representative trends that were comparable between the U.S. and Canada.

Results

Comparing U.S. and Canadian Adolescent Girls

Table 1 describes the U.S. and Canadian samples. Starting with the dependent variable, about one in four young women experienced a pregnancy between ages 13 and 19 in the U.S., compared to only 13% of the Canadian sample. As for family structure histories, most respondents were born to married mothers (73% of U.S. girls and 80% of Canadian girls), but secondary family structures differed by country. Single mothers were the second most common family structure at birth (22%) in the U.S. compared to cohabitation (14%), which predominated in Canada. When looking across teen pregnancy experiences, lower proportions of young women who had a teen pregnancy were themselves born to married mothers, and the proportions born to cohabiting or single mothers was around two times greater for young women with teen pregnancies. Relatedly, family structure changes were more widespread in the U.S. than in Canada, with 46% of U.S. girls experiencing at least one change compared to only 28% of Canadian girls. In both countries, young women who became pregnant as teenagers tended to have histories of family structure change, but U.S. girls experienced multiple changes (42% with two or more family structure changes) whereas Canadian girls mostly experienced only one change (38%).

This stratification was even more pronounced when looking at poverty history in both samples. Poverty was a frequent aspect of U.S. childhood, with more than one third of respondents living in poverty for at least two years (although close to half of respondents never experienced poverty as children). Comparatively, seven in ten young women in Canada never experienced poverty during childhood. Considering poverty histories by teen pregnancy, more than six in ten U.S. young women who experienced a teen pregnancy spent at least two years of their childhood living in poverty compared to half as many (31%) Canadian young women with a teen pregnancy. Poverty was so much rarer in Canada, in fact, that similar numbers of Canadian teens who became pregnant (53%) and the full U.S. sample (50%) spent any of their childhood in poverty.

Turning to maternal covariates, maternal teen births were over five times more common among U.S. compared to Canadian youth (17% in U.S. vs. 3% in Canada); yet, within each country teenage pregnancy was two times more common among respondents who were themselves born to teen mothers compared to respondents who were born to older mothers (26% vs. 13% in the U.S. and 6% vs. 3% in Canada). Twice as many Canadian mothers were college-educated compared to U.S. mothers (33% in Canada vs. 16% in U.S.). The teen pregnancy gap by maternal education, however, was much more pronounced in the U.S.: mothers' college education was four times more common among U.S. young women who did not experience teen pregnancy compared to those who did (20% vs. 5%). In contrast, a high level of maternal education was only 1.5 times more common among Canadian young women who did not become pregnant as teenagers (35% vs. 23%).

Overall, then, young women in the two countries were, for the most part, born into married mother households, but most markers of social disadvantage were particularly common in the U.S. sample overall and especially pronounced among U.S. young women who became pregnant as teenagers. Experiences of family structure change and poverty were both common for about half of the U.S. sample compared to only about three in ten Canadian girls, and those changes and episodes reached higher levels among U.S. girls.

Linking Family Histories to Teen Pregnancy in the U.S. and Canada

Turning to the multivariate results, Table 2 shows coefficients, standard errors, and relative risks for competing risk models predicting teen pregnancy, estimated separately for the U.S. and Canadian samples. In the U.S., the risk of teen pregnancy was significantly lower among young women with college-educated mothers and significantly greater among those whose mothers were single or cohabiting relative to married at the time of their birth, net of the full set of sociodemographic covariates. Neither maternal education nor union status at the time of the young women's births were associated with Canadian young women's risk of teen pregnancy at conventional levels of statistical significance ($p < .05$). Additionally, Z tests for equality of coefficients revealed that the maternal union status at birth coefficients were statistically indistinguishable between the U.S. and Canadian samples. This lack of difference between the significant U.S. results and the non-significant Canadian results was likely due to the similar coefficients yet different standard errors for single mothers and the low number of U.S. mothers cohabiting at the time of their daughters' births.

Histories of family structure and poverty appeared to factor into the risk of adolescent pregnancy for young women in both the U.S. and Canada but in different ways across the two countries. In the U.S., only higher-order experiences of family structure change and episodes in poverty were significantly associated with risk of teen pregnancy. In this national context, two or more family structure changes relative to none were associated with 26% greater likelihood of teen pregnancy, and two or more episodes in poverty were associated with two times greater likelihood of teen pregnancy. Experiencing just one episode of either, however, did not seem to matter to girls' likelihood of becoming pregnant.

Among Canadian young women, however, any family structure change or episodes in poverty were associated with significantly greater risk of teen pregnancy. One change and multiple changes in family structure from birth to age 13 were each associated with a 74%

and 90% greater likelihood, respectively, of becoming pregnant as a teenager relative to respondents with no changes in family structure by age 13. Young Canadian women who experienced one episode or two or more episodes of poverty prior to age 13 were also over two times more likely to report teen pregnancy relative to those who never experienced poverty.

Returning to the Z tests for equality of coefficients, all but one of the country-level differences in coefficients for family structure changes and poverty histories were statistically significant. Multiple episodes in poverty was the exception, with higher-order experiences of poverty increasing the risk of teen pregnancy similarly for U.S. and Canadian young women.

Discussion

Despite long-term declines in overall rates, teen pregnancy is a topic of public interest and policy attention in many Western countries, including the U.S. and Canada (Hoffman & Maynard, 2008). Although much of the focus on young people's sexuality and fertility centers on teenagers who currently are or could soon become pregnant (Kohler, Manhard, & Lafferty, 2008), we argue teen pregnancy is a short-term event that emerges from dynamic and contextual life course trajectories. In this study, we looked back to childhood to explore the connection between family histories of instability and poverty and the risk of pregnancy in adolescence. The first hypothesis, therefore, was that more unstable and economically insecure family histories would raise the risk of teen pregnancy. Oriented by a life course perspective (Crosnoe & Johnson, 2011; Elder et al., 2015), we placed young women not only within the micro-level context of their families but also within the more macro-level context of the country in which they lived. The U.S. and Canada made an interesting comparison because the two countries share many common features, even as they diverge in other ways. On the basis of their structural and cultural differences, we evaluated whether the link between family history and teen pregnancy was more pronounced in the U.S. where there are fewer social supports or in Canada where teen pregnancy, family instability, and poverty are less normative experiences.

Before reflecting on how the long arm of childhood matters both within and between countries for teen pregnancy, we first connect our descriptions of the experiences of young women in the U.S. and Canada with the existing literature. In line with previous research (Darroch et al., 2001), almost one in four U.S. girls became pregnant as teenagers, compared to less than 13% of Canadian girls. Family structure changes and spells of poverty— independent yet interrelated markers of socioeconomic disadvantage (Wu, 1996)—were also much more common childhood experiences in the U.S. than they were in Canada. Although there is nothing new in reporting that Canada generally fares better than the U.S. on these indicators, few studies have actually compared the complete poverty and family structure histories of children between these two countries. As such, we encourage researchers to continue these efforts because they are foundational for future comparative work and for illuminating the underlying causes and consequences of varying childhoods.

Indeed, the two main findings that emerge from this study reinforce the importance of the broad sweep of childhood family structure and poverty histories. First, we found support for the hypothesis that the risk of teen pregnancy would be higher among adolescents from more unstable and economically insecure families. Whereas most U.S. and Canadian studies of teen pregnancy and childbearing rely on point-in-time measure of family background (Al-Sahab et al., 2012; Fairthorne et al., 2017; Kim, 2014; Manlove et al., 2009; Meade et al., 2008; Singh et al., 2001; Wildsmith et al., 2012), this study instead evaluated how cumulative experiences of disadvantage and instability contribute to risk for teen pregnancy. The links were particularly apparent in the U.S., where single episodes of poverty and single changes in family structure were unrelated to the risk for teen pregnancy, but higher-order instability and poverty (i.e., two or more episodes) were both associated with teen pregnancy. Highlighting how the *amount* of adversity (changes in family structure and spells in poverty) increases the risk of teen pregnancy offers a different way of thinking about selection. That is, rather than statistical methods that aim to adjudicate whether the diminished life chances of teen mothers and their children stem from missteps in adolescence or more broadly reflect the intergenerational transmission of a disadvantaged background, we advocate for a long view that tracks the cumulative effects of family disadvantages on risk for teen pregnancy from the first moments of a young woman's life.

Second, this study situated these relationships within the macro-level context of young women's country of residence. As already noted, any family structure instability or spells in poverty were associated with increases in Canadian young women's risk of teenage pregnancy, whereas only higher-order instability and poverty (i.e., two or more episodes) were linked to the risk of teen pregnancy in the U.S. We subsequently moved beyond a description of these patterns to conduct formal tests. These tests confirmed that the associations of family structure changes and poverty episodes on teen pregnancy risk operated differently in Canada as compared to the U.S. Assessing our structural and cultural hypotheses, then, we conclude that the link between childhood experiences and adolescent pregnancy was stronger in Canada. This conclusion runs contrary to our earlier supposition that U.S. women would be more vulnerable to disadvantage than Canadian women. In short, these findings offer few clues in discerning how structural and cultural norm-based factors might apply.

As such, we are limited in our ability to speak to the meanings of or mechanisms behind these cross-national differences. Similar to other scholars (Kearney & Levine, 2012), we posit that our findings are the result of differences in social policies as well as cultural norms between the U.S. and Canada. In other words, greater social safety nets may be associated with the lower overall rates of teenage pregnancy, but the less normative experiences of family instability and poverty during childhood in Canada may make them more detrimental to young women's risk of teen pregnancy (i.e., they are strongly associated with a greater risk of pregnancy). Future research is needed to support these theories and should thus attempt more causal approaches to this question, perhaps through natural experiments involving historical shifts in policy or periods of drastic transformations in family experiences.

A further limitation of this study is that the U.S. and Canadian samples consisted of young women only, excluding the childhood and adolescent experiences of young men. This sample criteria was based in part on the fact that adolescent girls provide more accurate reports of their sexual and fertility histories compared to adolescent boys' reports of their partners' pregnancies in surveys such as the NLSY (Lindberg, Sonenstein, Martinez, & Marcotte, 1998; Nock, 1998). Similarly, we only considered the incidence of teenage pregnancy, not whether such a pregnancy resulted in a live birth as opposed to an abortion or miscarriage. Previous work has specifically parsed out various pregnancy outcomes (see Darroch et al., 2001; Kearney & Levine, 2012; McKay & Barrett, 2010). This study, however, focused on teen pregnancy more generally because of data constraints. Future research should thus take a broader view of adolescent pregnancy by incorporating boys' risks of getting someone pregnant and by exploring different types of resolutions to pregnancies.

A final data-related limitation of this study is that our results likely underestimated how many family structure changes young women experienced as children. The NLSY79 and NLSY79-YA were conducted biennially, meaning maternal union status was measured two years apart and the full extent of changes between survey waves may not be captured. The NLSCY, on the other hand, did ask respondents' mothers about family structure changes between waves but a skip pattern error in the retrospective questions for family structure history at initial interview meant that not all changes in family structure prior to the first wave were fully captured. We attempted to address this issue by collapsing counts of family instability as well as family poverty into categories. Future single-country longitudinal studies should use datasets, such as the NICHD Study of Early Child Care and Youth Development, that include more frequent measurements of household composition and income (see Cavanagh & Huston, 2006). Another important future direction is to replicate this study's findings with younger cohorts than our analytical samples of respondents born in the late 20th century. Given recent increases in nonmarital childbearing, including to U.S. cohabiting parents (Kennedy & Bumpass, 2008), this study's findings may be generalizable to young people who grew up in the U.S. and Canada in the 1980s and 1990s but not to more recent periods characterized by different family structures.

Despite these limitations, this study offered an exploration of the risk of teen pregnancy that situated young women within the dynamic trajectories of their entire lives up to that point as well as their national context through a cross-national comparison between the U.S. and Canada. These findings revealed a much more disadvantaged U.S. context where teen pregnancy, family instability, and poverty are common experiences in young women's lives, but they also demonstrated that Canadian young women's risk of teen pregnancy was shaped by any family structure change or episode of poverty. In both countries, therefore, our results concur with previous research to suggest that, although increased access to and use of the most effective contraceptive methods are important, comprehensive policy efforts to reduce teen pregnancy must also address socioeconomic disadvantage among children of all ages (Kearney & Levine, 2012; Santelli & Melnikas, 2010). Further insights await scholarly attention to the unfinished tasks of understanding the greater overall incidence of both socioeconomic disadvantage and teen pregnancy in the U.S. and identifying the mechanisms

that account for the stronger linkage among family structure histories, socioeconomic disadvantage and teen pregnancy in Canada.

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Table 1
 Weighted Descriptive Overview of U.S. and Canadian Samples, by Teen Pregnancy

	Frequency, %					
	U.S.			Canada		
	Non-attributed Sample	Never Teen Pregnancy	Ever Teen Pregnancy	Non-attributed Sample	Never Teen Pregnancy	Ever Teen Pregnancy
Family Structure History						
Maternal union status at child's birth						
Single	21.7	16.8	36.6	6.3	5.2	11.8
Married	72.6	78.4	54.7	80.1	83.5	66.7
Cohabiting	5.7	4.8	8.7	13.6	11.3	21.5
Family structure changes						
No changes in family structure	54.2	59.4	38.2	72.4	76.3	50.2
One change only	17.8	17.3	19.5	20.1	18.3	37.5
Two or more changes	28.0	23.3	42.3	7.5	5.4	12.3
Poverty History						
Episodes in poverty						
Never poor	49.7	57.2	27.0	70.9	76.2	46.8
One episode only	13.6	14.7	10.4	13.2	12.1	22.1
Two or more episodes	36.7	28.1	62.6	15.9	11.7	31.1
Maternal Covariates						
Maternal teen birth						
Mother college-educated	16.5	13.3	26.3	3.2	2.5	6.3
Frequency	100.0	75.4	24.6	100.0	87.5	12.5
<i>n</i>	2,602	1,962	640	1,947	1,703	244

Table 2

Competing Risks Models Predicting Teen Pregnancy in U.S. and Canada

	U.S.			Canada		
	β	SE	RR	β	SE	RR
Maternal Teen Birth	-0.033	0.119	0.968	0.305	0.284	1.357
Mother College-Educated	-0.775***	0.209	0.461	-0.289	0.159	0.749
Maternal Union Status at Birth						
Single	0.277**	0.103	1.319	0.267	0.230	1.306
Cohabiting	0.450**	0.168	1.568	0.195	0.173	1.216
Family Structure Changes						
1 change	0.013	0.117	1.013	0.556***	0.165	1.743
2 or more changes	0.232*	0.098	1.261	0.639***	0.184	1.895
Episodes in Poverty						
1 episode	0.171	0.157	1.186	0.713***	0.175	2.039
2 or more episodes	0.788***	0.113	2.199	0.825***	0.168	2.282
-2 Log Likelihood	11687.201			3624.24		
<i>n</i>	3,122			2,517		

Note:

 $p < .001$,**
 $p < .01$,*
 $p < .05$;

U.S. model controlled for birth year, race/ethnicity, maternal nativity status, region, and urbanicity and included inverse propensity score weights for early maternal birth; Canadian model included controls for age in 1994, maternal nativity status, region, and urbanicity.