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The first family formation among young Americans: the role of family process

Ali Roghani[1] · Samuel H. Nyarko[1] · Corey Sparks[1]

Abstract

The percentage of young American adults living with their parents is said to have increased steadily over the last few decades. However, limited research has examined the role of parent–adolescent interaction in the first family formation of young adults. This study examines the association between adolescents' family process and their first union formation (marriage and cohabitation) from the ages of 16 to 35. This study also tests whether the influence of the family process varies significantly by age. Using data from the National Longitudinal Survey of Youth 1997, an event history analysis was conducted to address how the mechanisms of social learning by family affect the timing and types of first union formation. The results indicate that individuals with a positive family process have a lower risk of cohabitating during adolescence and a higher chance of transitioning to marriage than cohabitation in their first union formation. The findings also show that a positive family process is associated with higher chances of marriage in the mid-twenties and later. The study further shows that fathers may have a substantial role to play in affecting the timing and types of first union formation of their children compared to mothers. The findings of this study suggest that family processes are important in determining the timing and type of first union formation among young people in the United States.

Keywords Cohabitation · Transition to adulthood · Marriage · Family process

Introduction

Adolescence is a crucial stage when considering the development of close romantic ties (Zimmer-Gembeck et al. 2018). Family-of-origin experiences have been found to persist into later life-course stages and affect romantic relationships (Knapp et al.

✉ Ali Roghani
  ali_roghani@hotmail.com

1   Department of Demography, College of Health, Community and Policy, The University of Texas At San Antonio, San Antonio, USA

2015). United States Census data from 1960 to 2010 indicate an increase in the percentage of young adults living with their parents (Payne 2012). Besides, in 2018, this percentage has increased 6 percent from the first few decades of the twenty-first century (Payne 2019). Therefore, cultural and generational changes along with longer residence in the parents' home may suggest that parent–adolescent interactions have become more critical now than in the past. The relationship between adolescents and their parents may change mainly during middle school at the initiation of the teen years (Luthar and Ciciolla 2016). Adolescence is associated with a higher disagreement with parents, lower engagement in shared activities with family members, and more peer group relations (Smetana et al. 2006). Even though relationships with friends and romantic partners increase during adolescence, parents remain crucial resources and role models to affect adolescents' romantic relationship behaviors. The interaction with parents is vital for adolescents to shape their attitudes, beliefs, and practices regarding the nature of family, and the parental home environment can work as a template for their subsequent family formation behaviors.

Furthermore, not only have adolescents' interactions with their parents become more complicated than in previous generations, but American young adults' family formation has also become more heterogeneous (Oesterle et al. 2010). Family formation behaviors have changed over time, and lower rates of marriage have been offset by increasing cohabitation for the first union formation (Manning et al. 2014). Although the average age at first marriage has increased in the past two decades in the United States, the timing of the first co-residential union formation has not changed considerably (Kennedy and Bumpass 2008; Stykes et al. 2014). Previous research has shown that young adults who form their unions at younger ages are more likely to enter cohabitation, which may not be as stable and beneficial as marriage for young couples and their children's well-being (Axinn, and Thornton 1992; Cohen and Manning 2010).

Even though many family demography researchers have conducted various studies on adolescents' subsequent family formation behaviors, there has been limited research on the importance of interactions between family members (Day et al. 2001; Feldhaus and Heintz-Martin 2015). Thus, how family interactions influence the first union formation behaviors among the youth remains under-studied. The extant studies show that those who cohabit at relatively young ages had more conflictual, less supportive family environments, and low engagement in shared activities with family members (Conger et al. 2000; Senia et al. 2016; Thorsen 2017). Starrels and Holm (2000) examined the effects of parental socialization on adolescents' plans for marriage and found that family factors (mothers' intention, fathers' decision making, and chores) predict positive attitudes toward marriage. Thorsen (2017) also applied many measures of family environments including adolescents' family belonging—feelings of inclusion within their families—to study the family formation and found that negative family belonging was associated with a higher likelihood of entering cohabitation at an earlier age.

In this study, we examine the association between the family process during adolescence and the timing and types of young adults' first union formation (cohabitation and marriage). We, also, examine whether the influence of family processes on the formation of cohabitation and marriage varies significantly with age throughout

the transition from adolescence to adulthood. As American adolescents and young adults stay longer in their parents' homes, the National Longitudinal Survey of Youth 1997 is an outstanding data source that captures a considerable portion of the time they spend with their parents. This data source allows us to simultaneously examine family formation behavior and the influence of parents using a longitudinal approach. This study provides a better understanding of the timing and first union formation behaviors of young adults in the United States, based on their family process background during adolescence.

Theoretical framework

This study is guided by the social learning theory (Bandura 1977). The social learning theory emphasizes that parents shape the attitudes, behaviors, and intentions of their adolescents to form their unions in later life (Bandura 1977). One of the primary sources of these experiences is family processes, which are rooted in three major propositions. First, family processes are defined as an interdependency system, where family members affect other members directly and indirectly. Second, family processes are made up of subsystems such as the parental marital relationship, parenting styles, parental monitoring, parent–adolescent relationships, family routines, and rituals, which work interdependently as a family system. Third, the family process approach has a multidirectional structure and circular nature, which is shaped by the interactions of family members (Daly 2003; Day et al. 2001). Thus, the quality of family interactions is dependent on the whole of the family members, but not on a single person. Also, family processes do not have a linear nature, which means all the practices, and activities can mutually interact. For instance, more family activities are connected to positive parent–child relationships or parental controlling. Lastly, contextual factors (e.g., familial socioeconomic status, race/ethnicity, and cultural factors) are found to affect the performance of family processes (Holmes et al. 2009). A wide range of life-course studies has shown that later romantic relationship behaviors may be mainly formed during adolescence (Conger et al. 2000; Ha et al. 2019). As such, experiences in the family environment during adolescence may continue to influence individuals' subsequent behavior within romantic relationships and marital union (Thornton et al. 2007; Parade et al. 2012).

Three measures of family processes are used in this study. First, family routines may be defined as specific, repeated practices with at least two members of a family. Strong family routines serve as family rituals, and they provide more warmth, hope, closeness, and better quality of life among family members (Dollahite et al. 2004; Santos et al. 2015). In early adolescence, family routines may bring greater family cohesion and can promote greater confidence in relationships, and ultimately marital union behaviors (De Graaf et al. 2012; Fosco et al. 2016).

The second measure of the family process is parental monitoring and described as the controlling of adolescents' activities, relationships with friends, and the level of attention given to them (Dishion and McMahon 1998). High levels of parental monitoring are considered to provide more stability and warmth in the family environment, and better well-being for adolescents (Fletcher et al. 2004; Dillon et al.

2007; Cottrell et al. 2003; Moran et al. 2018), whereas low levels of monitoring may facilitate the transition to adulthood, such as becoming a very young father (Hofferth and Goldscheider 2010). The third measure of the family process is the parent–adolescent relationship. A positive parent–adolescent relationship is characterized by higher levels of praise, parent–child interaction time, and supportiveness (Hair et al. 2005). It also provides a model for a rewarding romantic relationship and higher psychosocial developments (Kumar and Mattanah 2016). These three subsystems of the family process work interdependently and are reliant on each other (Jones-Sanpei et al. 2009). Experiencing positive family processes during adolescence may provide a greater sense of family, which leads young adults to value and form their union which replicates their original family environment (Furman et al. 2002).

During adolescence and the transition to adulthood, individuals may face risk factors, which are possibly negative events, such as the onset of using substances, ongoing family conflict, early sexual experiences, or the death of a parent may increase the likelihood of stress disorders. It may be obvious that adolescents with higher risk factors are more likely to experience adverse outcomes than adolescents with lower risk factors. Adolescents may also face several new risks, but parental support may be a crucial element for adolescent behavioral developments (Holmes et al. 2009) and resilience building. This role of parents is considered as one of the vital discussions in family systems theory, which highlights the significance of family processes as a proximate part of adolescent emotional and behavioral adjustment. These protective factors may be related to higher togetherness, family cohesion, positive support, and communication.

In this regard, we set two hypotheses to guide this study. Young adults who experience positive family processes are more likely to enter marriage rather than cohabitation. Also, we hypothesize that positive family processes will have enduring effects in adolescence and early adulthood, but the differences will converge over time. Family process measures have been applied to include the influence of the strengths and weaknesses of the family's ability to experience risk and resilience. The characteristics and strengths found in resilient families during adolescence are assessed to understand how the timing and types of the first union change during the transition to adulthood.

Methods

Data source

The National Longitudinal Study of Youth 1997 (NLSY97), a prospective nationally representative survey of youth from the birth cohort 1980–84, was used for this study. The first wave started in 1997 with 8,984 individuals with oversamples of black and Hispanic youth when the participants were between the ages of 12 to 16, and the respondents have been re-interviewed annually since then. The NLSY97 includes repeated measures of unions, relationships, and family process measurements that can be used to examine family formation outcomes in the United States. A resident or guardian was also interviewed during the first wave, which was used to

identify parents' educational attainment, religiosity, family structure, and socioeconomic variables. In the first 1997 survey, NLSY researchers gathered data from both parents and their adolescent children. The present study uses data from 1997 (Round 1) to 2015 (Round 17), with the youngest respondents being aged 30 in 2015.

There was considerable attrition in the final sample for the analyses due to many reasons including the dropping out of the survey by some participants, or the inability to answer some key variables. Also, adolescents who entered a union at age 15 or earlier were, excluded from the sample, based on legal restrictions on the marital age. Due to reports of deaths or permanent drops from the sample, the number of participants who were not interviewed in the last survey was 1,881. The NLSY97 did not ask 4,093 of the participants questions concerning the family process measures. As a result, these participants were also excluded from the study. Also, there were 136 missing cases regarding family characteristics variables. However, for life-course measures, the respondents were not removed from the sample, if they did not answer these variables because we assume that they were the same as the previous wave. With the considerable portion of the original sample missing owing to the aforementioned factors, the patterns of attrition were examined to check the effect of the attrition on the analyses, which did not show any notable differences in the results. With these exclusions, the final sample was 2,874 adolescents who were single at age 16 and at risk of forming their first union.

Study variables and measurements

The dependent variables were the occurrence of the first cohabitation and marriage. The NLSY97 asks respondents their current marital status as well as the month and year of first cohabitation and marriage in each wave. The first outcome of union formation was coded as "cohabiting" if the respondent was single at the preceding wave, and he/she responded "never married, cohabitating" during the following wave. Similarly, for the second outcome, if a respondent reported being "married, spouse present" and "married, spouse absent," the event variable was coded as entering a marriage. Those who reported "never married, not cohabiting" were, however, coded single and were considered censored for the event if they never experienced one of the two transitions described above. The sample created a yearly indicator of whether cohabitation or marriage starts or ended in any month of each survey. Thus, the duration of short-term cohabitations was captured. Cohabitations that began and transitioned into marriage within the same year were, however, coded as cohabitation. This coding scheme was followed for all waves in the data.

Three measures of family processes were such as family routines, parental monitoring, and parent–adolescent relationship were considered as the main predictor variables of the study. The survey questions were designed based on the Child Trends and Center for Human Resource Research (1999).

The family routines were measured at baseline, applying the Index of Family Routines, obtained from the Family Routines Inventory (Jensen, James, Bryce, & Hartnett 1983). Family Routine Index is the measurement of adolescents' routines and ritual activities within the parental home and included four questions. Each

question had a range of 0 to 7; therefore, the index ranged from 0 to 28 as follows: in a typical week, (1) how many days do you eat dinner with your family? (2) how many days does housework get done (when it is supposed to, for example, cleaning up after dinner, doing dishes, or taking out the trash?) (3) how many days do you do something fun as a family such as play a game, go to a sporting event, go swimming, and so forth? and (4) how many days do you do something religious as a family such as go to church, pray, or read the scriptures together? A Cronbach's alpha of 0.82 was generated for this scale.

The scale of parental monitoring included four questions to assess how well parents know adolescent's relationships, education status, and activities. This was based on standard questions utilized by family studies researchers to measure parent–adolescent interactions (Maccoby and Mnookin 1992). Each question ranged from 0 to 4. Thus, the total range was 0 to 16. The questions were: (1) How much does he/she know about your close friends, that is, who they are? (2) How much does he/she know about your close friends' parents, that is, who they are? (3) How much does he/she know about who you are with when you are not at home? and (4) How much does he/she know about who your teachers are and what you are doing in school? The Cronbach's Alpha generated to estimate the reliability of the mother and father monitoring scales were 0.86 and 0.87, respectively.

The parent–adolescent relationship scale was a measurement of the quality of the relationship between adolescents and their parents. The first three questions were asked on a 5-point scale from strongly disagree to agree strongly, while the subsequent five questions ranged from "never" to "always." All eight questions were coded from 0 to 4 points. Therefore, the scale's range was between 0 and 32. The questions were as follows: (1) I think highly of him/her, (2) S/he is a person I want to be like, (3) I enjoy spending time with him/her, (4) How often does s/he praise you for doing well? (5) How often does s/he criticize you or your ideas? (6) How often does s/he help you do things that are important to you? (7) How often does s/he blame you for her/his problems? and 8) How often does s/he make plans with you and cancels for no good reason? The internal consistency, as measured by Cronbach's alpha, was 0.84 for the mother–adolescent relationship scale and 0.86 for the father–adolescent relationship scale. The main predictors were finally measured in three categories as low/negative level (family process measures scores ≤ Mean − 1standard deviation [SD]), average/average level (Mean − 1 SD < family process measures scores ≤ Mean + 1 SD), and high/positive level (Mean + 1SD < family process measures scores).

Additionally, several control factors were considered in the analysis to mediate the association between family processes and the first family formation. These include family characteristics such as parental education (less than high school, high school, and some college and more), family structure, total household income, family's net worth, enriching environment risk index, and the age of biological mother at birth of the respondent. The family structure indicates whether the respondent came from an intact family or a broken home. Parents were asked about their total household income in the first round and the family's current net worth. Both measures were log transformed to control the analyses.

Enriching environment risk was an index of educational facilities in their parents' home. This index was created using the following questions: (1) In the past month, has your home usually had a computer? (2) In the past month, has your home usually had a dictionary? and (3) In a typical [school week/work week/week], did you spend any time taking extra classes or lessons, for example, music, dance, or foreign language lessons? These questions were summed ranging from 0 to 3 where 0 was coded as not enriching, and 1 as enriching. Parents' religiosity index was constructed using the following six questions: (1) I do not need religion to have good values (reverse coded); (2) The Bible/Koran/Torah/religious teachings should be obeyed exactly as written in every situation; (3) I often ask God to help me make decisions; (4) God has nothing to do with what happens to me personally (reverse coded); (5) I pray more than once a day; and (6) In the past 12 months, how often have you attended a worship service (like a church or synagogue service or mass)? Each question was coded dichotomous, and the scale ranges from 0 (not religious) to 6 (very religious). In our analyses, enriching environment risk and parents' religiosity were coded as low level (Index scores $\leq$ Mean $-$ 1standard deviation [SD]), mid-level (Mean $-$ 1 SD $<$ index scores $\leq$ Mean $+$ 1 SD), and high level (Mean $+$ 1SD $<$ index scores). The Cronbach's alphas generated for enriching environment risk and parents' religiosity were 0.71 and 0.73, respectively.

Life-course event measures such as the transition to parenthood, employment status, education attainment (less than high school, high school, associate degree, and bachelor's degree or more), and enrollment status as well as demographic characteristics such as gender and race/ethnicity (blacks, Hispanics, and whites) were also included in the study as control variables.

Analytic strategy

The study sample was organized in a person-period file format, based on the age of respondents at the time of risk exposure. We initially calculated and presented a Cumulative Incidence Function (CIF) for the probability of entering the first union. A linear spline was added to the model to approximate the duration pattern and continuity of age to show how the hazards smoothly increase or decrease over the study period. Also, a categorical form of age was added to the analysis, in four age groups as adolescence (age 15–18), early adulthood (19–24), the mid-twenties (25–29), and early thirties (age 30–35), to estimate the effect of the family process throughout the life-course stages.

Discrete-time multinomial logistic regression was used to estimate the relative risks of entering the first union. Once a young adult reported the first family formation, the subsequent years of data were omitted. Wald tests were applied to examine the statistical significance of the model parameters, and the interactions with age were also tested to assess whether the effects of the family process measures were proportional over time (Singer and Willett 2003). The data were analyzed with the R programming language (version 3.5.2) (R Core Team 2018). The results were presented in three sets of models. Model 1 included results of odds ratios on the family process measures and the first union formation among singles while Models 2

included the control variables. Model 3, the full model, included the family pro-
cess measures, and the control variables, as well as the interaction between the fam-
ily process measures and age. The results were weighed using the complex survey
design by incorporating sample stratification and clustering.

Results

Descriptive results

Table 1 presents the descriptive results of the study. The total study sample is
composed of 1,392 females (48%), and 1,482 males (52%) with an average age of
23.3. About 52 percent of the sample were whites, 28 percent and 20 percent were
blacks and Hispanics, respectively. Also, 70 percent of the sample reported aver-
age levels of family routines, while 15 percent reported either low or high levels
of family routines. Regarding parental monitoring, the majority of the sample had
average levels of monitoring (72% and 64% for mothers and fathers, respectively).
High levels of father monitoring were higher than those reported high levels of
mother monitoring (16% vs. 8%). The majority of the respondents (65%) reported
an average mother–adolescent relationship, while only 18 percent reported a posi-
tive mother–adolescent relationship. Also, the majority of the sample had an average
father–adolescent relationship (74%), while just a few reported a positive relation-
ship with their fathers (12%). About 75 percent of the respondents were raised by
two parents while the rest were raised by single parents. Also, 23 percent of parents
did not complete their high school diploma, and 13 percent of the respondents were
born to teenage mothers. About 42 percent of the sample reported a low enrich-
ing environment, and 64 percent of the sample had parents with average religiosity.
Furthermore, about 38 percent of the sample made a transition to parenthood, 55
percent of the sample had attained degrees, and 58 percent were employed.

For the formation of the first union, there was a small difference risk between the
first cohabitation and marriage up to age 25, while the cumulative incidence risk
indicated a greater difference between the occurrence of the first cohabitation and
marriage between ages 25 and 35 (see Fig. 1). Table 1 also shows that 26 percent of
the young adults remained single in 2015, 17 percent were married, while 57 per-
cent were cohabiting.

Multivariate results

The results of the multivariable analysis presented in Table 2 indicate that fam-
ily routines, fathers' monitoring, and father–adolescent relationships were associ-
ated with first cohabitation and marriage of the respondents even after controlling
for family and individual characteristics in Models 2 and 3. Respondents with
high levels of family routines during adolescence had at least 19 percent higher
odds of entering marriage (versus remaining single) compared to those with aver-
age family routine levels. However, individuals who reported high family routine

Table 1 Descriptive statistics for the analytical sample (NLSY97)

Variable	Mean/percentage	SD	Range
Mean age	23.31	3.96	12–35
Gender (Female)	48.41%		0–1
Race			
Non- Hispanic White	51.70%		0–1
Non-Hispanic Black	28.17%		0–1
Hispanic	20.13%		0–1
High family routines	15.29%		0–1
Average family routines	70.16%		0–1
Low family routines	14.55%		0–1
High mother monitoring	7.63%		0–1
Average mother monitoring	72.29%		0–1
Low mother monitoring	20.76%		0–1
High father monitoring	15.84%		0–1
Average father monitoring	63.52%		0–1
Low father monitoring	20.88%		0–1
Positive mother–adolescent relationship	17.81%		0–1
Average mother–adolescent relationship	65.38%		0–1
Negative mother–adolescent relationship	20.88%		0–1
Positive father–adolescent relationship	12.35%		0–1
Average father–adolescent relationship	73.86%		0–1
Negative father–adolescent relationship	13.77%		0–1
Intact families	74.78%		0–1
Mother education			0–1
Less than high school	23.60%		0–1
High school	39.74%		0–1
Some college and more	36.66%		0–1
Father education			
Less than high school	22.82%		0–1
High school	38.80%		0–1
Some college and more	38.31%		0–1
Enriching environment level			
High enriching environment risk	35.64%		0–1
Average enriching environment risk	22.11%		0–1
Low enriching environment risk	42.24%		0–1
Parental religiosity			
High parental religiosity	15.62%		0–1
Average parental religiosity	64.25%		0–1
Low parental religiosity	20.13%		0–1
Mother was teenage mom	13.40%		0–1
Transition to parenthood	38.42%		0–1
Educational attainment			
Less than high school	08.70%		0–1

Table 1 (continued)

Variable	Mean/percentage	SD	Range
High School	36.74%		0–1
Some college and more	54.56%		0–1
Employment status			
Employed (Wave 2015)	57.87%		0–1
Dependent variable			
Single in 2015	26.03%	0.03	0–1
Marriage is the first union	17.05%	0.01	0–1
Cohabitation is the first union	56.92%	0.01	0–1
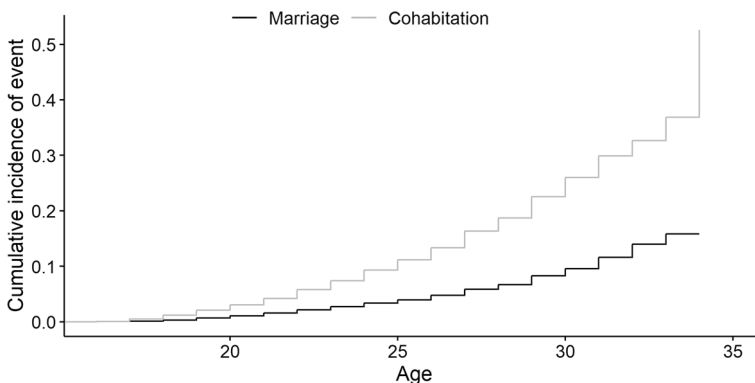
Fig. 1 Competing risks for cohabitation and marriage

levels in adolescence had 24 percent lower odds of cohabiting while those with low family routine levels had 14 percent higher odds of cohabiting compared to individuals with average levels of family routines.

Monitoring by fathers was associated with both cohabitation and marriage, whereby adolescents with low monitoring by father had significantly lower odds of entering marriage (OR = 0.81) but higher odds of entering cohabitation (OR = 1.23) compared to those with average levels of monitoring by father. Monitoring by mothers, on the other hand, did not have any association with first cohabitation and marriage. Similarly, unlike the mother–adolescent relationship, the father–adolescent relationship had an association with the first cohabitation and marriage. Respondents with positive father–adolescent relationships had 29 percent higher odds whereas those with negative father–adolescent relationships had 27 percent lower odds of entering marriage compared to respondents with an average father–adolescent relationship. Also, respondents with a negative relationship with father, however, had 24 percent higher odds of entering cohabitation. The interactions with age also show 39 percent higher odds of marriage after the age of 25 among those with positive father–adolescent relationships compared to adolescents with an average relationship with fathers (p < 0.05, Model 3). As

Table 2 Discrete-time multinomial logistic regression models for the transition to first union formation (NLSY97)

	Model 1 (OR)		Model 2 (OR)		Model 3 (OR)	
	Marriage	Cohabitation	Marriage	Cohabitation	Marriage	Cohabitation
Family routines (t–v)						
Average family routines (Ref.)						
High family routines	1.24**	0.92*	1.23*	0.85*	1.19*	0.76*
Low family routines	0.95	1.11*	0.93	1.14*	0.88	1.14*
Mother monitoring (t–v)						
Average mother monitoring (Ref.)						
High mother monitoring	1.03	0.96	0.93	0.94	0.88	0.89
Low Mother monitoring	1.03	1.00	1.01	0.94	1.07	0.91
Father monitoring (t–v)						
Average father monitoring (Ref.)						
High father monitoring	1.06	0.85	1.04	0.92	1.04	0.92
Low father monitoring	0.72**	1.18*	0.79**	1.14*	0.81**	1.23*
Mother–adolescent relationship (t–v)						
Average mother–adolescent relationship (Ref.)						
Positive mother–adolescent relationship	0.95	1.00	1.04	1.08	1.09	1.03
Negative mother–adolescent relationship	1.01	1.11	1.00	0.98	1.05	1.01
Father–adolescent relationship (t–v)						
Average father–adolescent relationship (Ref.)						
Positive father–adolescent relationship	1.31*	0.93*	1.30*	0.99	1.29*	0.97
Negative father–adolescent relationship	0.80**	1.11*	0.71**	1.15*	0.73*	1.24*
Intact family structure (Ref: Non-intact family)			1.27	0.73**	1.26	0.72**
Mother's education						
Less than high school (Ref.)						
High school			0.98	1.09	0.94	1.07

Table 2 (continued)

	Model 1 (OR)		Model 2 (OR)		Model 3 (OR)	
	Marriage	Cohabitation	Marriage	Cohabitation	Marriage	Cohabitation
Some college and more			1.16	1.13	1.18	1.11
Father's education						
Less than high school (Ref.)						
High school			0.91	0.82***	0.89	0.83**
Some college and more			0.92	0.69***	0.88	0.71**
Household family income (log$)			1.12*	0.88	1.14*	0.90
Family's net worth (log$)			1.14	0.85*	1.17	0.84
Enriching environment risk (t–v)						
Average enriching environment risk (Ref.)						
High enriching environment risk			1.06	0.96	1.08	0.94
Low enriching environment risk			0.98	1.19*	0.88	1.23*
Parental religiosity (t–v)						
Average parental religiosity (Ref.)						
High parental religiosity			1.33**	0.68***	1.36**	0.69***
Low parental religiosity			0.87	1.14***	0.85	1.15***
Mother was teenage mom			1.17	1.33**	1.21	1.33*
Transition to parenthood (t–v)			1.10*	1.36*	1.13*	1.38*
Educational attainment (t–v)						
Less than high school (Ref.)						
High school			1.23**	0.52**	1.32**	0.54**
Some college and more			1.10**	0.33*	1.13**	0.40*
Employment (t–v)			1.14	1.34	1.14	1.34
Female			1.49**	1.75***	1.55**	1.79*

Table 2 (continued)

	Model 1 (OR)		Model 2 (OR)		Model 3 (OR)	
	Marriage	Cohabitation	Marriage	Cohabitation	Marriage	Cohabitation
Race (C)						
White(ref.)						
Black			0.53*	0.55**	0.49*	0.57**
Hispanic			1.27*	0.76	1.39*	0.81
Family routines index transition by age interaction						
Average family routine × age 15–18 (Ref.)						
High family routines × age 19–24					1.48	1.57*
High family routines × age 25–29					1.90	2.18*
High family routines × age 30–35					0.56	2.03**
Low family routines × age 19–24					0.76	0.98
Low family routines × age 25–29					0.45	0.88
Low family routines × age 30–35					0.51	0.74
Mother monitoring (t–v) by age interaction						
Average mother monitoring × age 15–18 (Ref.)						
High mother monitoring × age 19–24					0.54	0.80
High mother monitoring × age 25–29					0.20**	0.61
High mother monitoring × age 30–35					0.01	0.09
Low mother monitoring × age 19–23					1.60	0.89
Low mother monitoring × age 25–29					1.45	0.89
Low mother monitoring × age 30–36					1.94	1.12
Father monitoring (t–v) by age interaction						
Avg. to high father monitoring × age 15–18 (Ref.)						
High father control × age 19–24					0.39	1.57

Table 2 (continued)

	Model 1 (OR)		Model 2 (OR)		Model 3 (OR)	
	Marriage	Cohabitation	Marriage	Cohabitation	Marriage	Cohabitation
High father control × age 25–29					0.31	0.82
High father control × age 30–35					0.28*	0.65
Low father control × age 19–24					0.70	0.54**
Low father control × age 25–29					0.59	0.21**
Low father control × age 30–35					0.17	0.30**
Mother–adolescent relationship (t–v) by age interaction						
Average to high mother–adolescent relationship × age 15–18 (Ref.)						
Positive mother–adolescent relationship × age 19–24					0.90	1.49
Positive mother–adolescent relationship × age 25–29					1.20	0.90
Positive mother–adolescent relationship × age 30–35					1.17	1.21
Negative mother–adolescent relationship × age 19–24					0.63	1.13
Negative mother–adolescent relationship × age 25–29					0.99	1.11
Negative mother–adolescent relationship × age 30–35					0.50	1.61
Father–adolescent relationship (t–v) by age interaction						
Average to high mother–adolescent relationship × age 15–18 (Ref)						
Positive father–adolescent relationship × age 19–24					0.50	1.21
Positive father–adolescent relationship × age 25–29					0.61*	1.14
Positive father–adolescent relationship × age 30–35					0.44*	1.61
Negative father–adolescent relationship × age 19–24					0.89	0.79
Negative father–adolescent relationship × age 25–29					0.65	0.80
Negative father–adolescent relationship × age 30–35					0.87	0.29*

OR: Odds Ratios; Significant at *p<.05. **p<.01. ***p<.001
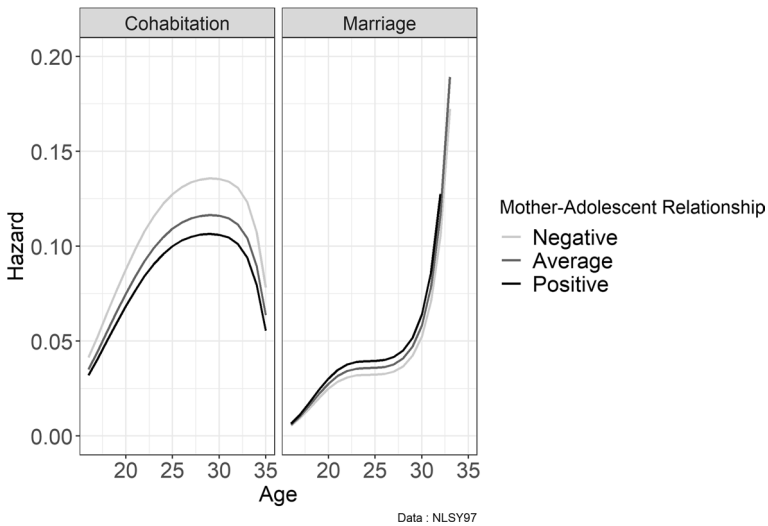
Fig. 2 Mother–adolescent relationship and hazard of first family formation
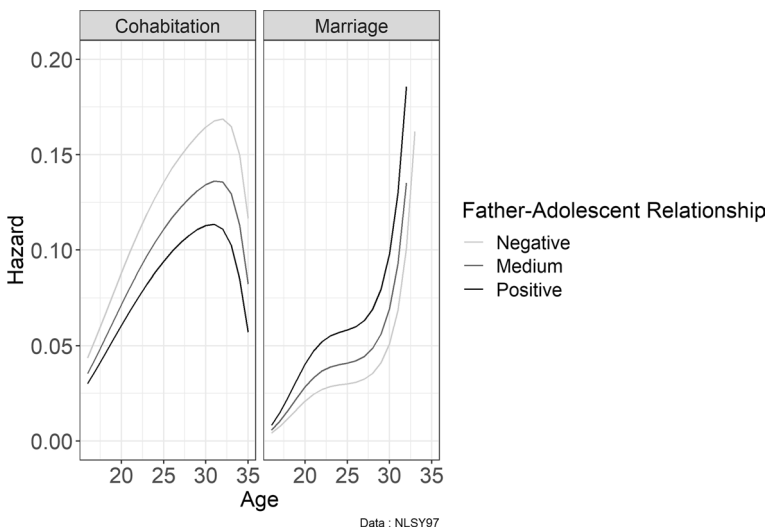
Fig. 3 Father–adolescent relationship and hazard of first family formation

Figs. 2 and 3 indicate that father influence was important for first marriage, while the mother–adolescent relationship did not have a significant relationship with the first union.

In addition to the family process measures, other factors showed a significant association with the first family formation union. In terms of family characteristics, individuals who were raised by two biological parents were 27 percent less likely

to cohabitate than individuals who experienced parental divorce. Higher father education was associated with a lower likelihood of cohabitation. Regarding socio-economic characteristics of family of origin, higher household income was associated with higher odds of marriage (OR = 1.12, Model 2), while higher family's net worth was associated with a lower likelihood of cohabitating (OR = 0.85, Model 2). Respondents from lowly enriching environments had significantly higher odds of entering cohabitation (OR = 1.19, Model 2). Those whose parents reported high parental religiosity were more likely to marry in their first union (OR = 1.33, Model 2). Respondents who were born by teenage mothers were more likely to cohabit for their first unions (OR = 1.33, Model 2). Regarding individual factors, the transition to parenthood was associated with 10 percent higher odds of marrying, and 36 percent higher odds of cohabitating compared to those who did not have a baby. Also, higher education was associated with a higher likelihood of marriage (OR = 1.13, Model 2) and lower odds of cohabitation (OR = 0.40, Model 2). Lastly, demographic factors in the analyses had significant relationships with the first family formation union. Females were more likely to marry (OR = 1.49, Model 2) and cohabit (1.75, Model 2) than males. Blacks had lower odds of cohabitating (OR = 0.53, $p < 0.05$, Model 2) and marrying (OR = 0.55, $p < 0.01$, Model 2) compared to whites; however, Hispanics had a higher likelihood of marrying compared to whites (OR = 1.27, Model 2).

Discussion

This study assesses the relationship between the family process during adolescence and subsequent first union formation timing and types from the age of 16 to 35. For the timing of the first union, the findings show that a negative family process generally accelerates the timing of the first cohabitation and delays the entry of marriage. This is especially the case for adolescents who experience low levels of monitoring by fathers and family routines. Likewise, previous research has shown that experiencing more stressful family environments, and instability is associated with an elevated risk of early cohabitation (Zito 2013; Jamison 2017; Thoreson 2017) and negative family backgrounds are more linked to cohabitation than marriage (Feldhaus and Heintz-Martin 2015). Our findings may imply that individuals who experience negative family processes may be using the transition to cohabitation as an alternative route to leave the adverse conditions of parents' homes whereas their capability to make other kinds of living arrangements is limited. A positive family process, therefore, offers broader opportunities for young adults to remain single, delay their first unions, and have their age-specific preferences to form their first union.

The positive family process does not only reduce the possibility of early cohabitation but is also associated with a higher likelihood of entering marriage and, thus, supports our first hypothesis. Our findings, thus, show that individuals who experience a more supportive environment during adolescence may feel more enthusiastic to form unions with more cohesion and satisfaction, which may likely be marriage rather than cohabitation (Godbout et al. 2009). In effect, individuals who have a positive family process may likely enter marriage than

cohabitation, in imitation of or a desire for co-residential romantic relationships like their parental family (Thoreson 2017).

Although high levels of family routines and monitoring by fathers are vital factors for delaying cohabitation and encouraging marriage, mothers' monitoring does not play a significant role in forming the first union. A more positive relationship with fathers is vital for both marriage and cohabitation, while the relationship with mothers does not change the timing and probability of first unions. Hence, the fathers' role appears to be more important than mothers in reducing the likelihood of teenage cohabitation and increasing the chance of marriage. This supports the findings of previous studies that adolescents are better off in terms of psychosocial development with a close and supportive relationship with their fathers (Bronte-Tinkew et al. 2006; Keizer et al. 2019). It may be noteworthy that even though fathers and mothers may have different impacts (through family processes) on family formation timing and types, a combination of both parents may provide better outcomes for young adults.

As well, it appears that family processes may not be independents of demographic, parental socioeconomic, and individual characteristics of young adults. Our findings show that a positive father–adolescent relationship is associated with higher chances of marriage and lower chances of cohabitation. However, by considering the background characteristics, this effect remains for first marriage but attenuates for cohabitation. This change in effect means that parental socioeconomic status may be more critical for the timing of cohabitation (Wiik 2008). This, therefore, implies that contextual factors may influence the operation of family processes.

Moreover, our findings show that family processes have enduring effects that go beyond the mid-twenty, which is consistent with our hypothesis. Previous studies, on the contrary, have shown that parental socioeconomic and family factors are more influential in adolescence and early adulthood but then disappeared afterward (Mooyaart and Liefbroer 2016; Thoreson 2017). However, our findings show that the effect of the family process on cohabitation during adolescence and early adulthood may persist until the age of 35. Additionally, the results indicate that adolescents who report higher levels of mother monitoring and father–adolescent relationship have a higher chance of marriage after the age of 25. This implies that those who experience a positive family process may be following "normal" age patterns of marriage, and they might become better selected in the marriage market. The longer-lasting effects of family processes compared to other family background characteristics in the life-course perspective shows how important familial interactions are for the first union formation behaviors.

Family and individual characteristics also appear to play an important role in determining the timing and types of union formation. Higher household income, the transition to parenthood, individual educational attainment, employment, and being Hispanic appear to proffer considerably higher chances of marriage but lower chances of cohabitation. Also, being female provides higher chances of both cohabitation and marriage, whereas being black provides lower chances of both cohabitation and marriage. On the other hand, intact family structure and father's educational attainment appear to reduce the chances of cohabitation

whereas being the child of a teenage mother and coming from a lowly enriching environment considerably increases the chances of cohabitation.

Despite the enlightening evidence provided by this research, it still has some limitations. First, including parents' attitudes toward family formation behavior regarding future adolescents' cohabitating, marriage, and partnering could enrich the research. The study by Starrels and Holm (2000) that indicates mothers' expectations best predict children's plans for marriage and parenthood. Second, while the NLSY97 included a few measures of family process, data for family abuse, conflict, and stress during adolescence were not available. Third, there is some evidence of survey attrition for adolescents with low levels of family routines and parental monitoring as they were excluded from the study. Hence, our findings may underestimate the association between negative family processes and the formation of first unions. Fourth, the effects of family process measures may change with the timing of movement from the parental home, which may be important for the timing and types of the first union. However, young adults' departure from the parental home was based on residential history data collected at each wave of the NLSY97, starting in 2003 and ending in 2015. Therefore, the interaction between family processes and leaving parental home during adolescence could provide more enlightening information. Lastly, the respondents in our sample are still young for a more comprehensive assessment of marriage. Although the age range of 16 to 35 provided a broad illustration of the first cohabitation, a more extended period may give us more information about the first family formation.

Conclusions

This study shows that family processes, in multiple dimensions, are paramount in the timing and first family formation behaviors of young adults in the United States. In this study, however, there is some evidence of possible different parental effects on family formation behaviors during the family process. While higher levels of family routines appear to substantially favor marriage entry but averse to cohabitation, the role of the level of monitoring by fathers and the nature of father–adolescent relationships also appear very crucial to first family formation behaviors, unlike that of mothers. As well, positive family processes may have long-lasting positive effects on the first union formation behaviors of young adults in the United States. Social policies can emphasize fathers' involvement in the family processes particularly with monitoring and relation with their adolescents. Thus, positive family processes mediated by fathers can prevent teenage cohabitating and encourage appropriate marriage timing. Future research should focus on fathers' influence and outcomes later in life. Also, future studies should consider family process performance based on parental resources, as the quality of family processes may be mediated by parents' socioeconomic resources.

Compliance with ethical standards

Conflict of interest Authors declare that they have no conflict of interest.

References

Axinn W, Thornton A (1992) The relationship between cohabitation and divorce: selectivity or causal influence? Demography 29(3):357

Bandura A (1977) Social learning theory. Prentice-Hall, Englewood Cliffs

Bronte-Tinkew J, Moore KA, Carrano J (2006) The father-child relationship, parenting styles, and adolescent risk behaviors in intact families. J Fam Issues 27(6):850–881

Child Trends and Center for Human Resource Research (1999) NLSY97 Codebook Supplement Main File Round 1. Appendix 9: Family Process and Adolescent Outcome Measures. U.S. Department of Labor, Bethesda, MD

Cohen J, Manning W (2010) The relationship context of premarital serial cohabitation. Soc Sci Res 39(5):766–776

Conger R, Cui M, Bryant C, Elder G (2000) Competence in early adult romantic relationships: a developmental perspective on family influences. J Pers Soc Psychol 79(2):224–237

Cottrell L, Li X, Harris C et al (2003) Parent and adolescent perceptions of parental monitoring and adolescent risk involvement. Parenting 3(3):179–195

Daly K (2003) Family theory versus the theories families live by. J Marriage Fam 65(4):771–784

Day RD, Gavazzi S, Acock A (2001) Compelling family processes. In: Thornton A (ed) The well-being of children and families: research and data needs. University of Michigan Press, Ann Arbor, pp 103–126

De Graaf H, van de Schoot R, Woertman L et al (2012) Family cohesion and romantic and sexual initiation: a three-wave longitudinal study. J Youth Adolesc 41(5):583–592

Dillon F, Pantin H, Robbins M, Szapocznik J (2007) Exploring the role of parental monitoring of peers on the relationship between family functioning and delinquency in the lives of African American and Hispanic adolescents. Crime Delinq 54(1):65–94

Dishion TJ, Mcmahon RJ (1998) Parental monitoring and the prevention of problem behavior: a conceptual and empirical reformulation. Clin Child Fam Psychol Rev 1:61–75

Dollahite DC, Marks LD, Goodman M (2004) Families, and religious beliefs, practices, and communities: Linkages in a diverse and dynamic cultural context. In: Coleman MJ, Ganong LH (eds) The handbook of contemporary families: considering the past, contemplating the future. Sage, Thousand Oaks, pp 411–431

Feldhaus M, Heintz-Martin V (2015) Long-term effects of parental separation: impacts of parental separation during childhood on the timing and the risk of cohabitation, marriage, and divorce in adulthood. Adv Life Course Res 26:22–31

Fletcher A, Steinberg L, Williams-Wheeler M (2004) Parental influences on adolescent problem behavior: Revisiting Stattin and Kerr. Child Dev 75(3):781–796

Fosco G, Van Ryzin M, Xia M, Feinberg M (2016) Trajectories of adolescent hostile-aggressive behavior and family climate: longitudinal implications for young adult romantic relationship competence. Dev Psychol 52(7):1139–1150

Furman W, Simon VA, Shaffer L, Bouchey HA (2002) Adolescents working models and styles for relationships with parents, friends, and romantic partners. Child Dev 73(1):241–255

Godbout N, Dutton DG, Lussier Y, Sabourin S (2009) Early exposure to violence, domestic violence, attachment representations, and marital adjustment. Personal Relat 16(3):365–384

Ha T, Otten R, McGill S, Dishion T (2019) The family and peer origins of coercion within adult romantic relationships: a longitudinal multimethod study across relationships contexts. Dev Psychol 55(1):207–215

Hair E, Moore K, Garrett S et al (2005) The parent-adolescent relationship scale. In: Moore KA, Lippman L (eds) What do children need to flourish? Conceptualizing and measuring indicators of positive development. Springer, New York, pp 183–202

Hofferth SL, Goldscheider F (2010) Family structure and the transition to early parenthood. Demography 47(2):415–437

Holmes E, Jones-Sanpei H, Day R (2009) Adolescent outcome measures in the NLSY97 family process data set: variation by race and socioeconomic conditions. Marriage Fam Rev 45(4):374–391

Jamison T (2017) Cohabitation transitions among low-income parents: a qualitative investigation of economic and relational motivations. J Fam Econ Issues 39(1):73–87

Jensen EW, James SA, Bryce WT, Hartnett SA (1983) The family routines inventory: development and validation. Soc Sci Med 17:201–211

Jones-Sanpei H, Day R, Holmes E (2009) Core family process measures in the NLSY97: variation by gender, race, income, and family structure. Marriage Fam Rev 45(2–3):140–167

Keizer R, Helmerhorst K, van Rijn-van GL (2019) Perceived quality of the mother-adolescent and father–adolescent attachment relationship and adolescents' self-esteem. J Youth Adolsc 48(6):1203–1217

Kennedy S, Bumpass L (2008) Cohabitation and children's living arrangements. Demogr Res 19:1663–1692

Knapp D, Norton A, Sandberg J (2015) Family-of-origin, relationship self-regulation, and attachment in marital relationships. Contemp Fam Ther 37(2):130–141

Kumar S, Mattanah J (2016) Parental attachment, romantic competence, relationship satisfaction, and psychosocial adjustment in emerging adulthood. Personal Relat 23(4):801–817

Luthar SS, Ciciolla L (2016) What it feels like to be a mother: variations by children's developmental stages. Dev Psychol 52(1):143–154

Maccoby EE, Mnookin RH (1992) Dividing the child: social and legal dilemmas of custody. Harvard University Press, Cambridge

Manning WD, Brown SL, Payne KK (2014) Two decades of stability and change in age at first Union Formation. J Marriage Fam 76(2):247–260

Mooyaart J, Liefbroer A (2016) The influence of parental education on timing and type of union formation: changes over the life course and over time in the Netherlands. Demography 53(4):885–919

Moran KM, Turiano NA, Gentzler AL (2018) Parental warmth during childhood predicts coping and well-being in adulthood. J Fam Psychol 32(5):610–621

Oesterle S, Hawkins JD, Hill K, Bailey J (2010) Men's and women's pathways to adulthood and their adolescent precursors. J Marriage Fam 72(5):1436–1453

Parade SH, Supple AJ, Helms HM (2012) Parenting during childhood predicts relationship satisfaction in young adulthood: a prospective longitudinal perspective. Marriage Fam Rev 48(2):150–169

Payne KK (2012) Young adults in the parental home, 1940-2010 (FP12-22). National Center for Family & Marriage Research. Retrieved from http://ncfmr.bgsu.edu/pdf/family_profiles/ file122548.pdf. Accessed 5 Mar 2020

Payne KK (2019) Young adults in the parental home, 2007 & 2018. Family Profiles, FP-19–04. Bowling Green, OH: National Center for Family & Marriage Research. https://doi.org/10.25035/ncfmr/fp-19-04.

R Core Team (2018) R: a language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. http://www.r-project.org/.

Santos S, Crespo C, Canavarro MC, Kazak AE (2015) Family rituals and quality of life in children with cancer and their parents: the role of family cohesion and hope. J Pediatr Psychol 40:664–671

Senia JM, Neppl TK, Gudmunson CG et al (2016) The intergenerational continuity of socioeconomic status: effects of parenting, personality, and age at first romantic partnership. J Fam Psychol 30(6):647–656

Singer JD, Willett JB (2003) Applied longitudinal data analysis: modeling change and event occurrence. Oxford University Press, London

Smetana JG, Campione-Barr N, Metzger A (2006) Adolescent development in interpersonal and societal contexts. Ann Rev Psycholog 57(1):255–284

Starrels ME, Holm KE (2000) Adolescents plans for family formation: is parental socialization important? J Marriage Fam 62(2):416–429

Stykes B, Payne KK, Gibbs L (2014) First marriage rate in the U.S., 2012. Family profile FP-14-08, Center for Family & Marriage Research, Bowling Green State University, Bowling Green, OH

Thornton A, Axinn WG, Xie Y, Xie Y (2007) Marriage and cohabitation. University of Chicago Press, Chicago

Thorsen ML (2017) The adolescent family environment and cohabitation across the transition to adult-hood. Soc Sci Res 64:249–262

Wiik K (2008) "You'd Better Wait!": Socio-economic background and timing of first marriage versus first cohabitation. Eur Sociol Rev 25(2):139–153

Zimmer-Gembeck MJ, Van Petegem S, Ducat W et al (2018) Parent-child relationships and romantic development: a review and argument for research on autonomy-supportive parenting. In: Soenens B, Vansteenkiste M, Van Petegem S (eds) The meaning and the role of autonomy in adolescent development: toward conceptual clarity. Psychology Press, London, pp 168–192

Zito R (2013) Family structure history and teenage cohabitation. J Fam Issues 36(3):299–325