Smoking Cigarettes, Marijuana, and the Transition to Marriage among Cohabiters in the USA

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Abstract

Many studies have established that married people have lower rates of smoking than singles and cohabiters. However, there is still limited research showing whether this advantage also applies specifically to cohabiters before marriage. Hence, this study examines the association between cigarette and marijuana smoking and the transition to marriage among cohabiters in the USA. This study employs data from seventeen waves of the National Longitudinal Survey of Youth 1997. Discrete-time logistic regression models are used to test whether lower rates of cigarette and marijuana smoking among cohabiters are associated with the transition to marriage. Results indicate that lower levels of marijuana and cigarette smoking are associated with the transition to marriage among male and female cohabiters. Not smoking cigarettes and marijuana is associated with a significantly higher odds of transition to marriage for both sexes. The findings show that smoking status may play a significant role in the odds of getting married during cohabitation. Pro-marital policies can focus on addressing smoking habits among cohabiters.

Keywords Smoking · Cigarette · Marijuana · Transition to marriage · Cohabiter

Background

The transition to adulthood is a vital stage in life with key events such as family formation and parenthood (Furstenberg et al., 2005; Roghani et al., 2021; Schulenberg et al., 2004). Heterogeneity in the types of family formation among young adults may have increased in recent decades (Oesterle et al., 2010). Various factors such as marijuana and cigarette smoking are associated with family formation behaviors (Johnston et al., 2016). Meanwhile, research has indicated that young adults who directly enter marriage from single life are more likely to be motivated to accept social norms, whereas it is not clear whether cohabitation motivates young adults to accept social norms as marriage does (Hoffmann, 2018).

To better understand the difference between cohabitation and marriage regarding substance use behavior, it is important to distinguish between these two types of family formation. Cohabitation is regarded as a more secular and non-traditional union, whereas marriage is governed by more rigid social norms, and the roles of husbands and wives are clearly defined (Klärner, 2015). Marriage usually entails monogamy and long-term commitment, and married couples have a responsibility to maintain social norms that are necessary for avoiding risky health behaviors such as marijuana smoking (Duncan et al., 2006; Fleming et al., 2010; Ali & Ajilore, 2011). Thus, the lifestyle governed by marriage is generally different from that of single life and some types of cohabitation, both of which may be more tolerant of risky behaviors.

Existing research has shown that cohabitation increases the risk of substance use and does not change substance use behaviors (Hoffmann, 2018). Meanwhile, cohabitation has become a pathway into marriage among recent American generations, taking the same role as engagement, and a great number of cohabiters eventually enter marriage (Manning, 2020). Furthermore, previous research has linked a reduction in health-risk behaviors to marriage, particularly for men (Shrout & Kiecolt-Glaser, 2020). Existing research also indicates that cigarette use is associated with a delay in marriage for females, while marijuana use is associated with a delay in marriage for males (Jang et al., 2018). However, it has been observed that the nexus between risky health behaviors and the transition from cohabitation to marriage has received relatively little attention (Duncan et al., 2006).

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Thus, there is a gap in the literature concerning the association between heterosexual cohabitation, substance use, and the eventual transition to marriage among cohabiters. As such, the current study examines whether rates of smoking cigarettes and marijuana among cohabiters are associated with the transition to marriage in the USA.

We expect lower levels of substance use to be associated with higher odds of transition to marriage relative to remaining in cohabitation or breaking up. We also stratify our analysis by sex, which is an integral part of union formation (Jackson, 2012), and we expect the associations of marijuana and cigarette with the transition to marriage to be similar. Although smoking cigarettes is a longer-lasting behavior, avoiding smoking marijuana may be more influential in the transition to marriage among cohabiters (Fedorova et al., 2020). Additionally, this study considers mental health indicators, which may be crucial for the stability of the relationships (Percheski & Meyer, 2018) and are significantly associated with using substances (Guttmannova et al., 2017). In this regard, it may be noteworthy that for females, mental health may improve after the formation of unions, whether marriage or cohabitation, while men's mental health status may improve after marriage (Rapp & Stauder, 2019). This study, therefore, provides a deep understanding of the role substance use may play concerning the transition from cohabitation to marriage among heterosexual cohabiters in the USA.

Materials and Methods

Data Source

This study draws on data from the National Longitudinal Study of Youth 1997 (NLSY97). This is a prospective nationally representative survey of youth from the birth cohort of 1980–1984 in the USA. The first wave started in 1997 when the participants were between the ages of 12 to 18. The NLSY97 repeatedly collects data on several issues including measures of union formation, and substance use behaviors, and, therefore, provides the opportunity to examine the transition from cohabitation to marriage among the participants. The NLSY97 used a multi-stage stratified area probability sampling procedure to select participants from dwelling units and group quarter units in the USA. This study deployed all the seventeen waves until 2015 when respondents were between 30 and 36 years old. The unit of analysis is all respondents who were never married but were cohabitating between 1997 and 2015. Thus, a final sample size of 2178 is composed of study participants with data on their characteristics, and life course events pertinent to the study were used for the analysis.

Study Variables and Measurements

The outcome variable is whether cohabitation unions have ended in marriage. In the first wave, there were 143 cases that reported cohabitation with most of the sample being less than 16 years. The NLSY97 asks respondents their current marital status as well as the month and year of cohabitation and marriage after the age of 16. Therefore, we captured short cohabitations in addition to cohabitations that took more than 1 year in the middle of the study duration. Cohabiting respondents who broke up in the subsequent waves were, however, removed from the risk set. In the current study, we examine two main predictor variables such as cigarette and marijuana smoking. These variables were measured in each wave to denote the number of days respondents have used cigarettes and marijuana in the last 30 days. Arbitrary cutoffs were applied to change the continuous formats of smoking cigarettes and marijuana to categorical variables (Shang, 2012). The number of cigarette smoking days was used to create three categories, such as non-smoking (0 day), intermittent smoking (1–23 days for females, 1–24 days for males), and daily smoking (24–30 days for females, 25–30 days for males). For Marijuana smoking, 0 day of smoking was categorized as non-smoking; 1–21 days and 1–22 days of smoking were categorized as intermittent smoking for females and males, respectively, while 22–30 days and 23–30 days were categorized as daily smoking for females and males, respectively.

Also, factors such as race/ethnicity, educational status, overall health, parental divorce, and childbirth with a partner were included as control variables in the analysis. Race/ethnicity was coded into three categories as White, Black, and Hispanic. Other miscellaneous races included in the NLSY97 were less than 1% of the main data. Consequently, only 9 young adults from these minority races were found in our sample; therefore, we excluded this group from our final sample for the analysis due to statistical power concerns. Educational attainment was categorized into four groups as less than high school, high school, some college, and college degree or more. Regarding overall health, respondents who reported "poor" health were coded as poor whereas other health conditions were coded as good health. A family structure variable was created to indicate whether respondents came from an intact family or experienced parental divorce or death. The transition to parenthood was constructed based on dates in months and years when respondents have had their first child. For mental health, NLSY asked questions regarding the level of anxiety using a scale of 1 to 7, where 1 means strongly disagree, and 7 means strongly agree. This was re-coded in three categories, where 1 to 3 were coded

as disagree, 4 was coded as neither agreed nor disagree (neutral), and 5 to 7 were coded as agree. For depression level, respondents reported how often they were depressed in the past month. This variable was measured in three categories as "most of the time," "some of the time," and "none of the time."

Analytic Strategy

Data processing and analysis were done with the R programming language (R version 3.6.1) (R Core Team, 2018). The final sample was organized into a person-period file for all current cohabiters, with separate records for each respondent for each year. This was used to generate descriptive results on the background characteristics of the sample in the form of tables and figures. Kaplan-Meier survival techniques were applied to estimate how the timing of the transition to marriage varied by gender (see Fig. 3). Further, a discrete-time logistic regression was applied to test the association between two main predictors—cigarette and marijuana smoking—and the transition from cohabitation to marriage among cohabiters in the sample. Three models were fitted and stratified by sex. Model 1 examined the effects of cigarette smoking for both sexes while model 2 examined the influence of marijuana smoking. Model 3 is the full model and controlled for the background characteristics of the respondents and some mental health indicators such as the feeling of anxiety and depression. The results were summarized in odds ratios with 95% confidence intervals. The results were weighted using the complex survey weighting procedure.

Results

Descriptive Results

Table 1 shows the descriptive results of the background characteristics of the study sample. More than half (52%) of the sample was White, while Black and Hispanic were around 28 and 18%, respectively. More than 50% of the sample had high school diplomas, and more women had advanced degrees than men (31% and 28%). About one-tenth of the sample had poor health while more than a quarter had experienced parental divorce. Also, about 46% of men and 53% of cohabitating women had a child with their partner. Moreover, only about 17% of cohabitating men and 24% of women had eventually transitioned to marriage. Around 45% were daily cigarette smokers, while only a few never smoked cigarettes (12.5% and 9.1% for males and females respectively). A total of 46.6% of males and 69.4% of females were intermittent marijuana smokers whereas more than one-third (36.3%) of males never smoked marijuana. These had reflected in the smoking rates among males and females

Table 1 Descriptive results of constant and time-varying characteristics, and those who made the transitions (NLSY97)

	Males (%)	Females (%)
Race/ethnicity(c)[b]		
White	52.4	53.2
Black	27.8	28.1
Hispanic	19.8	18.7
Education status[c]		
Less than high school	8.7	7.6
High school	54.5	54.3
Some college	8.3	07.1
College degree or more	28.5	31.0
Overall health		
Poor	11.9	11.1
Good	88.1	88.9
Family structure (C)[b]		
Parental divorce	26.1	27.7
Intact family	63.1	61.7
Parental death	10.8	10.6
Have a child with the partner [c]	46.0	53.5
Cohabitations end in marriage	16.9	23.7
Smoking[c]	10.9	
Non-smoking	12.5	09.1
Intermittent smoking	42.4	47.5
Daily smoking	45.1	43.4
Marijuana[a]		
Non-smoking	36.3	17.8
Intermittent smoking	46.4	69.4
Daily smoking	17.3	12.8
Feeling anxious[c]		
Disagree	55.8	44.0
Neutral	20.3	44.4
Agree	13.9	11.6
Feeling depressed[c]		
None of the time	62.9	54.3
Some of the time	7.4	9.5
Most of the time	29.7	36.2

[a]These variables are asked in the 2013 wave

[b]These variables are asked in the first wave of the survey (1997)

[c]These variables are asked in the 2015 wave

by single ages as shown in Figs. 1 and 2. A considerable proportion of the sample from the ages of 15 to 32 was daily cigarette smokers, and these rates did not change considerably. More than half of the male sample (56%) and about 44% of the females reported that they never felt anxious. Regarding depression, men had a lower rate of depression than females, with about 37% of men and 46% of women reporting ever feeling depressed. The survival analysis indicates that nearly half of male and female cohabiters eventually got married; however, most of the transition to
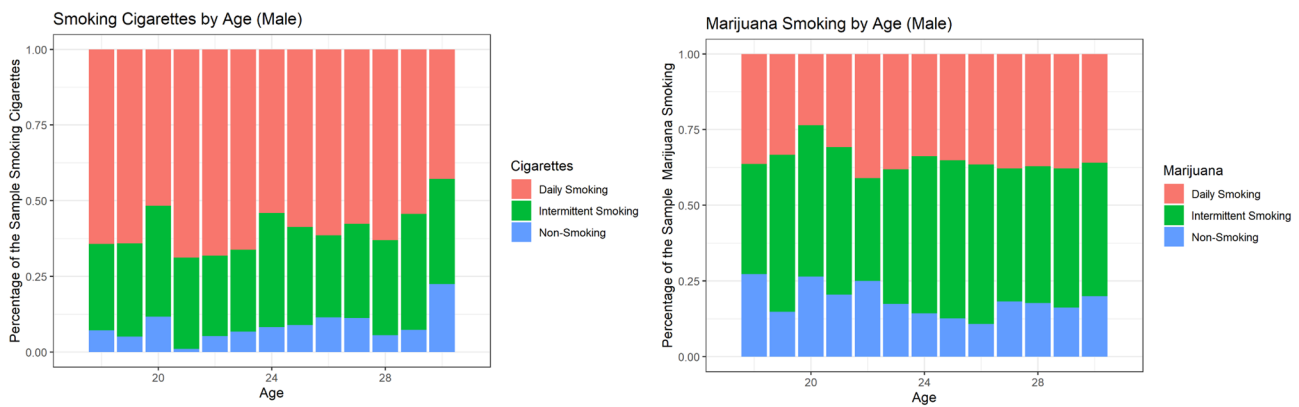
Fig. 1 Cigarette and marijuana smoking by age among males

marriage was after the age of 25 (see Fig. 3). This shows that although we traced the cohort from 1997, most of the events in the analysis happened after 2010.

The Transition from Cohabitation to Marriage

Table 2 shows a summary of results from the analysis of the transition to marriage among the study sample. Male cohabiters who never smoked cigarettes were more likely to marry than daily and intermittent smokers (62 and 51%, respectively). In model 3, the odds ratio decreased by about 10% after adjusting for control variables. Female daily smokers were less likely to be married by their cohabiting partners (OR = 0.33, $p = 0.001$, model 1; OR = 0.47, $p = 0.05$, model 3). Although model 1 indicates that there was no significant relationship between non-smoking and intermittent smoking, by including the control variables, the association became significant and even stronger than that of daily smokers (OR = 0.41, $p = 0.01$, model 3). While intermittent marijuana smoking

was not associated with the transition to marriage, non-smoking had a significantly higher likelihood of marriage than daily marijuana smoking for males and females. In the first model, men who were daily marijuana smokers had 40% lower odds of marrying, while females had 48% lower odds. By adjusting for control variables, the association appeared to be attenuated but remained significant. As indicated in Figs. 4 and 5, non-smokers were more likely to marry in every age by types of smoking among females and males.

Higher educational attainment appeared to be associated with increased odds of making a transition to marriage among both male and female cohabiters. Having a child with a partner during cohabitation was not associated with making a transition to marriage. Having a higher level of anxiety was associated with about 40% lower odds of transition to marriage for both males and females. The results also indicate that female cohabiters who had depression some of the time and most of the time were 29% and 6%5 less likely to enter marriage, respectively.
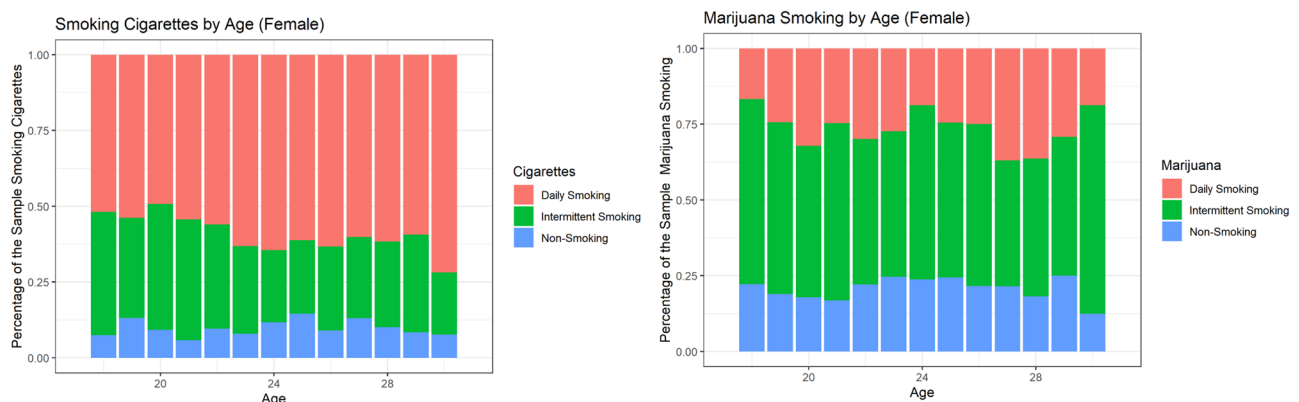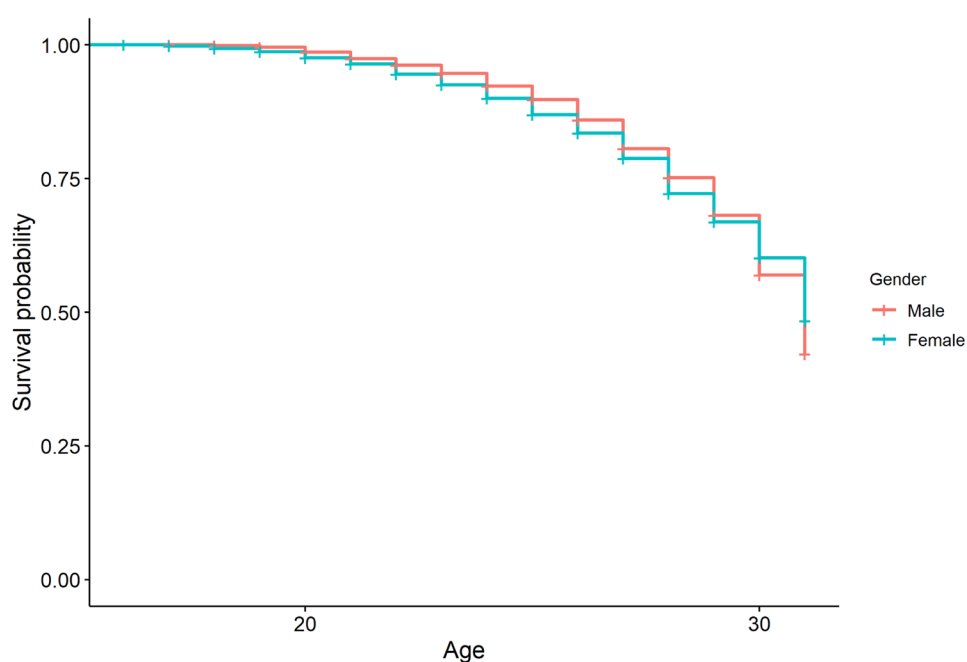

Fig. 2 Cigarette and marijuana smoking by age among females

Fig. 3 Survival analysis of the transition to marriage among cohabiters

Discussion

The findings of the current study provide some evidence of the association between cigarette and marijuana smoking behavior and the transition to marriage among cohabitating young American adults. The descriptive findings indicate that cigarette and marijuana smoking are highly prevalent among cohabiting young adults in the USA, and smoking rates do not seem to vary considerably over the life course until age 32. This mainly includes daily cigarette smokers and intermittent marijuana smokers. Hence, it appears that the rate of smoking cigarettes among young American adults is substantially higher than that of marijuana smoking for both sexes.

Furthermore, the findings show that smoking behavior is significantly associated with the transition from cohabitation to marriage among male and female cohabiters. Essentially, intermittent and daily smoking of cigarettes and marijuana are associated with significantly lower odds of getting married during cohabitation. As a corollary, not smoking cigarettes and marijuana during cohabitation appears to boost the chances of marriage considerably. This positive implication of not smoking appears to persist throughout the ages from 15 to 32 for both sexes. It has been shown that married couples have lower risky behaviors (Duncan et al., 2006; Fleming et al., 2010; Ali & Ajilore, 2011) and are more likely to have better health (Perelli-Harris et al., 2018; Tumin & Zheng, 2018). Previous research has shown that partners affect each other's health behaviors (Jackson et al., 2015), by monitoring and managing their health behaviors (Umberson, 1992). These healthy daily interaction patterns can help the partners to have more stable relationships in their cohabitation and eventually move to marriage. Therefore, this important advantage of not smoking may show that some American young adults may be cohabitating as a "trial of marriage" (Li et al., 2020), by considering the smoking behavior of their partners among others before deciding to make a transition to marriage.

Similarly, this may be an indication that the transition from cohabitation to marriage among American young adults is mainly the result of selection based on social norms barring cigarettes and marijuana smoking. This may follow the fact that unlike cohabitation, marriage serves as an agency of social control (Kulu & Boyle, 2010), and cohabiters may selectively want to marry people who adhere to social norms. However, cohabiters do not always have healthy behaviors, and a great proportion of cohabitations do not end in a marriage.

As well, the relationship between partnership status and smoking may depend considerably on educational attainment (Margolis & Wright, 2016) as cohabiters with an advanced degree are most likely to transition to marriage. Our findings further show that feeling of anxiety appears to significantly constrain the chances of transition to marriage among cohabiters for both sexes. Essentially, having no anxiety appears to be a considerable boost to the transition to marriage among cohabiters. Analogously, this study also finds that suffering from depression considerably limits the chances of transitioning to marriage among female cohabiters. However, this effect appears weak for male cohabiters, and it is unclear why this may be so. Perhaps, this may have something to do with the magnitude of depressed

Table 2 Factors predicting transforming cohabitation to marriage by logistic regression model (odds ratios), NLSY97

		Males			Females	
	Model 1	Model 2	Model 3	Model1	Model 2	Model 3
Cigarette smoking (t-v)	OR	OR	OR	OR	OR	OR
Non-smoking (Ref)						
Daily smoking	0.38***		0.47**	0.33***		0.47*
Intermittent smoking	0.49**		0.49**	0.43		0.41**
Marijuana smoking (t-v)						
Non-smoking (Ref)						
Daily smoking		0.60*	0.61*		0.52*	0.58*
Intermittent smoking		0.69	0.73		0.69	0.73
Race/ethnicity[a]						
White (Ref)						
Black			0.36**			0.26
Hispanic			0.78*			0.41
Education status (t-v)						
High school (Ref)						
Less than high school			0.92			0.91
Some college			1.34			1.28
College degree and more			2.31*			2.16*
Overall health (c)						
Poor (Ref)						
Good			1.88			1.21
Family structure (c)						
Intact family (Ref)						
Parental divorce			0.17			0.11
Parental death			0.15			0.16
Have a child with the partner						
No (Ref)						
Yes			1.28			0.84
Feeling anxious[a]						
Disagree (Ref)						
Neutral			1.19			0.83*
Agree			0.61**			0.57**
Feeling depressed (t-v)						
None of the time (Ref)						
Some of the time			0.78			0.71**
Most of the time			0.61			0.35*

OR odds ratios, significance, *t-v* time varying variable

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$

[a]These variables were measured one point

men compared to women. Mental health domains—anxiety and depression—as studied in this research have, therefore, shown a significant association with the marital chances of cohabiters with the mentally healthy cohabiters having a disproportionate advantage in the transition to marriage. Some studies have linked marriage to considerable mental health benefits (Tumin & Zheng, 2018; Uecker, 2012). Conversely, the findings of this study imply that the transition to marriage may also be due to the positive selection of cohabiters based on their mental health, and thereby echoing the

argument that the association between marriage and mental health may be partly due to selection (Jo, 2020).

This study has a few potential limitations. First, NLSY97 does not provide information on cohabiters' smoking behavior that we were unable to examine assortative mating in this study. Additionally, the data are based on self-reports of young adults. However, previous research contends that substance-using behaviors are underreported (Krumpal, 2011). Therefore, there may be a degree of bias that may influence the findings of this
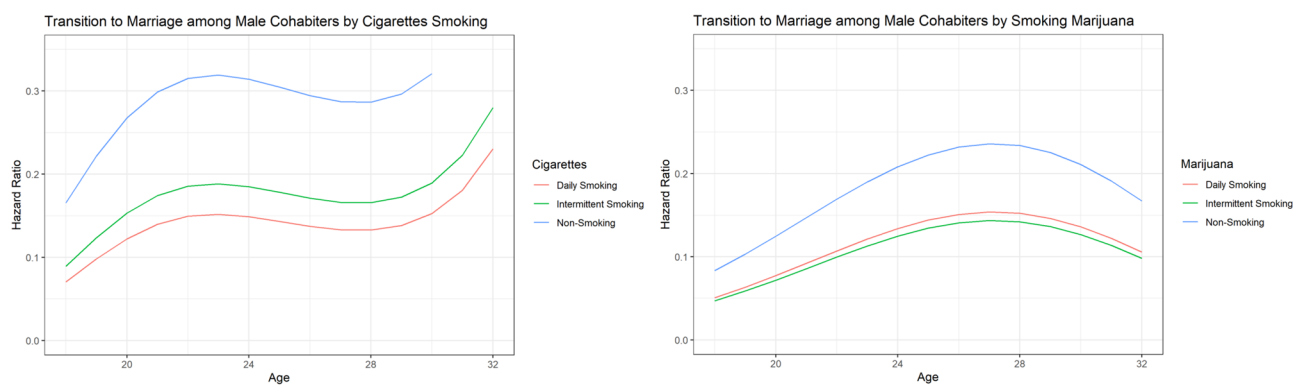
Fig. 4 Transition to marriage among male cohabiters

study. Nevertheless, this research makes a valuable contribution to the literature based on a longitudinal analysis of substance use and marital chances among cohabiters in the USA.

patterns after marriage among previous cohabiters. This will provide a better understanding of the long-term protective effects of marriage among this cohort. Finally, an assessment of other health-related behaviors such as
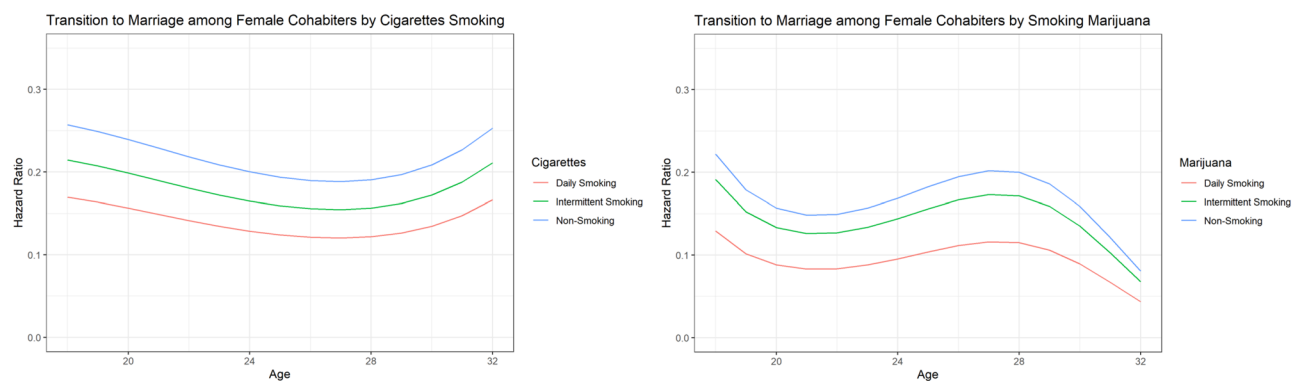

Fig. 5 Transition to marriage among female cohabiters

Conclusions

This study provides evidence that cigarette and marijuana smoking may play an important role in the transition from cohabitation to marriage among young adults in the USA. Nonsmokers of cigarettes and marijuana appear to be more likely to transition to marriage among cohabiters. Also, the mental health status of cohabiters appears to be associated with the transition to marriage. Mentally healthy cohabiters appear to be more likely to marry. This may partly help to explain why mental health tends to be better among those who are married. This study provides insight into the relationship between substance use and the transition to marriage among young adult cohabiters. As such, pre-marital policies should also address smoking habits among cohabiters to enable a smooth transition into marriage. Future studies can examine potential risky behavior

drinking and other illegal drugs can help to determine the influence of substance use in the transition to marriage among cohabiters.

Declarations

Research Involving Human and Animals This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of Interest The authors declare no competing interests.

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