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## **The Temporal Effects of Parental Divorce on Youth Substance Use**

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## **Abstract**

This paper examines how the parental divorce process affects youth substance abuse at various stages relative to the divorce. With child-fixed-effect models and a baseline period that is long before the divorce, the estimates rely on within-child changes over time. Youth are more likely to use alcohol 2-4 years before a parental divorce. After the divorce, youth have an increased risk of using alcohol and marijuana, with the effect for marijuana being 12.1 percentage points in the two years right after the divorce ( $p = 0.010$ ). The magnitudes of the effects persist as time passes from the divorce.

## **INTRODUCTION**

With more than 45% of married couples ending up divorcing, about 40% of all children experience a parental divorce (Hetherington and Elmore, 2003). This is especially alarming given that there is extensive literature on how parental divorces are associated with numerous negative outcomes for children. The outcomes have primarily focused on children's academic achievement, problem behavior, and psychological outcomes—see Amato (2001) for a review of the literature.

In a smaller set of articles, researchers have also examined how parental divorces affect youth risky behaviors, such as substance abuse (Flewelling and Bauman 1990; Foxcroft and Lowe 1991; Hoffmann 1993, 1994, 1995; Hanson 1999; Ledoux et al. 2002; Barrett and Turner 2006; Hayatbakhsh et al. 2006a, 2006b). The studies have generally focused on cigarette, alcohol, and marijuana use. Understanding the role that the parental divorce process plays in such substance use is vital, given the high rates of use among adolescents. Data extracted from the 2010 National Survey on Drug Use and Health indicate that past-year use among 18-20 year olds is 41.7% for cigarettes, 69.8% for alcohol, and 33.0% for marijuana, while the corresponding numbers for 16-17 year olds are 24.1%, 47.3%, and 25.8%.

The mechanisms underlying such an effect of the divorce process on youth substance use are based primarily on three arguments. First, two parents provide better socialization and control for the conduct of teenagers (Hoffmann 1995). Second, a divorce leads to poor parent-child relations (Amato and Keith 1991), which, in turn, cause teenagers to be exposed to a wider variety of peers, often including drug-using peers (Thornberry 1987). Third, substance use could be used as a means of coping with

the parental conflict and possible subsequent parental marital transitions associated with parental divorces.

All of these studies with the lone exception of Hanson (1999) just compare the substance use outcomes for those from divorced (or non-intact) families to those from intact families. But, there are likely significant unobserved differences between families that have a disruption and those that remain intact. Thus, it is uncertain whether the higher rates of substance use among children from families having a disruption is due to the disruption itself or due to the inherent differences between these families and intact families. For example, substance abuse problems among parents could contribute to the likelihood of a divorce and could contribute to a higher likelihood that their children engage in substance abuse by causing worse relations with their children, or simply by the children learning such behavior from the parents. In this case, we would observe a positive correlation between family disruptions and youth substance use even if the disruption itself had no effect on the youth children.

This problem of ignoring unobservable differences across non-intact and intact families is present in the vast majority of studies in the more general literature on how divorces and separations affect children. The most prevalent method for addressing the unobserved differences in the larger literature on how disruptions affect children is to use longitudinal data (Cherlin et al. 1991; Hanson 1999; Jekielek 1998; Morrison and Cherlin 1995). These studies observe children at two points in time, with the time between observations ranging from two years (Cherlin et al. 1991, Morrison and Cherlin 1995) to 5-7 years (Hanson 1999). The dependent variable is the outcome at the second point in time, and they include a variable for whether the parents divorced or separated between

the two points of observation. They address the problem of unobserved differences by including a measure of the outcome from the first point in time as an explanatory variable. This essentially makes it a difference-in-difference model.

While these longitudinal studies—including Hanson (1999)—address the problem of unobserved differences between non-intact and intact families, they have an implicit assumption that a divorce is a discrete event that has a lasting, constant effect at the time of the divorce. This could cause an understatement of the effects of the divorce on children because, when the children are observed before the divorce in the initial period, the family may be on the verge of divorcing or separating. Thus, much of the negative effects of the *divorce process* may have already been realized. And much of these effects would likely come from the parental conflict associated with the divorce, which has been found, in some cases, to have more of an effect than the divorce itself (Emery 1999; Shaw, Winslow et al. 1999; Peris and Emery 2004).

Aughinbaugh et al. (2005) and Arkes (2012) offer another approach to addressing the problem of unobserved heterogeneity in an examination of how marital disruptions affect children's test scores and children's weight problems at different periods relative to the time of the disruption. They use child-fixed-effects models, which addresses unobserved heterogeneity by comparing children to themselves at various points relative to the marital disruption. This approach also addresses the problems of longitudinal studies that the pre-divorce/separation outcome already captures the effects of the marital disruption process.

This study uses a similar approach as Aughinbaugh et al. (2005) and Arkes (2012) by estimating the temporal effects of the divorce process on substance-use outcomes for

youth. Furthermore, this study tests whether youth substance use is affected as the divorce approaches and whether the impact subsides, persists, or escalates as time passes from the divorce.

## **METHODS**

### Data

This study uses data from the 1997 National Longitudinal Study of Youth (NLSY97). The NLSY97 started with 8,984 people aged 12 to 17 in 1997 (born between 1980 and 1984). The survey has interviewed the respondents annually since the beginning. Sample attrition was less than 16% by the 10<sup>th</sup> round in 2006, when the last outcome is measured.

The date of the divorce is determined from a few sets of variables. The first set of variables used is from the initial (1997) round, when the parents of the respondents were asked about all previous marriages they had and how and when they ended. Just one parent was surveyed, and the first divorce the parent reported that came after the child's birth is taken. For those whose parents had not reported a divorce after the child's birth, information from the 2002, 2007, 2008, and 2009 surveys are used. In those interviews, respondents are asked whether their parents had divorced in the last five years and how old the respondent was at the time. This could be the respondent's biological parents, a biological and step parent, or adoptive parents. The date of the divorce for these cases is then marked at the respondent's half birthday for the age they indicate—for example, if they say they were 18 years old at the time, the divorce is dated at the month in which the

respondent turns 18 years and 6 months. Of the 8,984 respondents, 1,975 reported having their parents divorce at some point.

Three types of substance use are examined: alcohol, cigarette, and marijuana use. For each substance, dichotomous measures for any past-year use (“use since the last interview”), past-month use, and heavy use are examined. The heavy-use measures are: smoking in at least 28 of the past 30 days for cigarettes, having 5 or more drinks in one session for alcohol in the past 30 days, and smoking marijuana in at least 20 of the past 30 days.

### Sample

The sample is first restricted to the 1,975 respondents whose biological or adopted parents divorced at some point. The sample then takes the 11,715 observations for those respondents in which they were between 15 and 21 years old. The substance use measures are not consistently gathered for those respondents below age 15. The sample sizes for the models (i.e., for the various outcomes) vary depending on the number of missing values for the relevant outcome (which is below one percent for all outcomes).

Table 1 shows the descriptive statistics. There are fewer observations for the past-year outcomes because they are not available in the initial 1997 survey. The means for the variables other than the outcomes are based on the observation in the analysis for the first outcome, past-year alcohol use. The last panel of Table 1 gives general characteristics of the sample. These variables (e.g., gender) are constant over time and, thus, are left out of the model for reasons described in the next section. The sample is 48% male, 10% black, and 10% Hispanic. Their eventual educational attainment appears



to be fairly standard, with 84% having completed high school by age 20, 50% having completed at least one year of college by age 22, and 23% having completed four years of college by age 24. Large percentages of the sample had initiated cigarette use (60%), alcohol use (71%), and marijuana use (40%) by age 15.

### Model

The following individual-fixed-effects model is used:

$$Y_{it} = Z_{it}\delta + D_{it}\gamma + \tau_t + \mu_i + \varepsilon_{it}$$

where  $Y_{it}$  is a variable representing the outcome for respondent  $i$  in period  $t$ ,  $Z_{it}$  is a vector of such characteristics that vary over time,  $D_{it}$  is a vector of the variables indicating how many years prior to or after the divorce the observation is,  $\tau_t$  represents interview round (or time period) fixed effects, and  $\mu_i$  is the fixed effect for individual  $i$ . The vector  $Z$  includes age dummy variables and, for outcomes referring to the time since the last interview, a variable for the number of days since the last interview. Note that important contributing factors to these outcomes, such as race/ethnicity and age at the time of divorce, are not in the model as their effects are captured by the fixed effects.

While logit models are typically used for dichotomous outcomes, this analysis uses linear probability models (LPM's) instead for a few reasons. First, with fixed effects, the samples for logit models would be automatically reduced to those respondents who had variation over time in the outcome. Thus, for those who had not smoked a cigarette in the year prior to each interview, they would be automatically excluded from the model for that outcome. With an LPM, using fixed effects does not exclude people who had no variation in the outcome, thus making the samples more consistent. Second,

using sample weights is not very efficient in a fixed-effect logit model, but it is applied easily in a fixed-effect LPM.

Using LPMs rather than logit models typically would only matter for outcomes with very high or very low probabilities. Of the 9 outcomes, only the outcomes “heavy marijuana use” has a low probability of occurrence (6.6%). The results are substantively similar when using the fixed-effect logit models, and those results are available from the author upon request. The models are weighted by longitudinal-customized weights calculated by the NLSY97.

The divorce-timing variables in the D vector are listed in the second group of variables in Table 1, along with their percentages. There is a trade-off in that the further the baseline (reference) period is set before the divorce, the less of the effects of the divorce process will have emerged, so more of the full effects can be estimated. On the other hand, setting the baseline period earlier reduces the number of observations in that period, which reduces the power of the model. Weighing these issues, the baseline is set as 4-or-more years prior to the divorce.

The estimated effects in these fixed-effects linear probability models are based on within-person comparisons across periods. Basing the model on within-person comparisons eliminates the problem of unobserved heterogeneity. Not all individuals are observed in the baseline period (4-or-more years before the divorce). Rather, individuals are observed for between two and seven rounds of the survey and up to four of the different divorce-timing periods, and the model compares the within-person marginal changes from one period to the next. Thus, the coefficients can be interpreted as cumulative average marginal changes in the risk of engaging in the particular form of

substance use across the periods, based on within-person changes. Operationally, here is an example of how the model automatically calculates the effects. The coefficient estimate on “2-4 years before the divorce” is based on within-person comparisons of substance use for those observed in that period and the baseline period (4-or-more years before the divorce), factoring out any age effects because age dummy variables are included. The coefficient estimate for the next period (0-2 years before the divorce) is then based on within person comparisons of people observed in that period and the prior period (2-4 years before the divorce), again factoring out age effects, and then adding the effect from the prior period—the coefficient on “2-4 years before the divorce.” The estimates for subsequent periods are then based on the cumulative marginal effects (based on within-person comparisons, holding age constant) from period to period. All coefficient estimates would represent the risk of substance use relative to the baseline period of 4-or-more years before the divorce. This method allows, as shown below, the coefficients for each period to be estimated with fairly good precision, despite not having everyone observed in the baseline period.

While the effects of the later periods after the divorce are identified mostly by people who were younger when their parents split, the estimates are still based on within-person comparisons for them. Including the age dummy variables in the models should ensure that the differences across periods in substance use do not reflect age differences.

There are several aspects of this model that follow from Aughinbaugh et al. (2005) and Arkes (2012) in their examinations of how disruptions affect children’s test scores and weight problems. First, the model aims to estimate the *total average effect* of the divorce process and not a partial effect after controlling for some mechanisms. Thus,

the model does not control for any mediating factors for how the divorce process could affect the youth, such as parents' subsequent marital transitions and the teenager's educational attainment and school enrollment. And, by "average effect," it means that the estimates average the effects of all of children's' experiences from a divorce—e.g., some of whom experienced subsequent parents' marriages and divorces, others of whom did not.

A second aspect of this analysis similar to the two previous studies is the interpretation of causality. By limiting the model to just those whose parents divorced at some point (which the fixed-effects model would do regardless) and by comparing individuals to themselves at various points relative to the divorce, this analysis addresses the unobserved-heterogeneity problem from the previous literature that these youth were compared to youth from families that remained intact. But, as with the prior two articles, it is not certain that the estimates represent a causal effect for a random child who would be given the treatment of his/her parents divorcing. In fact, there is no method in this literature that provides an estimate on how a random child would be affected by a divorce. The interpretation of the estimates in this study is that they represent estimates for the "treatment effect for the treated," as Heckman et al. Heckman 1999 describe. That is, the estimates indicate how the divorce process affects youth substance use for those whose parents divorced.

This divorce process includes the effects of the risk and protective factors as well as the mediating factors for how the divorce process could affect children, such as through parental conflict and any deteriorating relationship between the child and his/her parents. One last important point is that, to estimate the *full* effect of the divorce process,

the model should not control for any mediating factors. Doing so would have the model produce just a *partial* effect of the divorce process.

## **RESULTS**

Table 2 shows the results from an initial set of models that just uses an indicator for the observation being after the divorce. This is similar in nature to the longitudinal difference-in-difference models described earlier, except that there could be multiple observations before and after the divorce for each person. For space considerations, I do not show the coefficient estimates on the survey year dummy variables (most of which are insignificant) nor the p-values, but I report important p-values below.

The coefficient estimates on the age variables show that all measures of alcohol use increase with age. Past-year cigarette use also appears to increase with age, while marijuana use seems to peak around age 18.

The estimates indicate that, after a divorce compared to before a divorce, youth are significantly more likely to engage in past-year alcohol use (by 7.1 percentage points,  $p = 0.001$ ), past-month heavy alcohol use (7.5 percentage points,  $p = 0.002$ ), past-year cigarette use (5.4 percentage points,  $p = 0.017$ ), past-year marijuana use (8.2 percentage points,  $p = 0.001$ ), and past-month marijuana use (5.3 percentage points,  $p = 0.015$ ). A few other outcomes (past-month alcohol use and past-month heavy marijuana use) also have positive coefficients that are almost significant, with  $p < 0.10$ .

These estimates may understate the effects of the divorce. Teenagers may already have a higher risk of substance use as the divorce approaches, due to the conflict and other factors leading up to the divorce. In this case, the pre-divorce substance use would

already be higher, leading to a smaller difference between the pre- and post-divorce periods. This will be confirmed below.

Table 3 presents the estimates from the primary models, with the full set of divorce-timing variables. For alcohol, by the period “2 to 4 years before the divorce,” youth are already at a significantly higher risk of drinking in the past year and in the past month by 8.4 ( $p = 0.039$ ) and 6.9 ( $p = 0.042$ ) percentage points, respectively. The estimates for the next period, “0-2 years before the divorce” are higher and also significant. The interpretation of these estimates is that, among those whose parents divorce, their risk of alcohol use increases as the divorce approaches, relative to what it would have been 4-or-more years before the divorce, beyond what the normal age trajectory would dictate. While the estimates on the variables for the two pre-divorce periods are positive for most of the other outcomes, there is no significant evidence that youth have an increased risk of cigarette and marijuana use in the few years leading up to a divorce.

After the divorce, however, there is evidence that youth have a higher probability of marijuana use. Youth are 12.1 ( $p = 0.010$ ) and 12.8 ( $p = 0.017$ ) percentage points more likely to have past-year marijuana use in the two years after the divorce and 2-to-6 years after the divorce, respectively. Regarding alcohol use, in two years after the divorce, the increased risks of alcohol use in the past year (18.1 percentage points,  $p = 0.000$ ) and past month (11.8 percentage points,  $p = 0.039$ ) get larger. Furthermore, the risk of past-month heavy alcohol use now is significant (11.1 percentage points,  $p = 0.008$ ). The estimates for all three of these alcohol outcomes stay significant in the period “2 to 6 years after the divorce” ( $p < 0.020$ ). And, the risks of past-year and past-month alcohol use stay

significant as more time passes from the divorce.” For cigarette use, the coefficient estimates on the divorce-timing variables are generally positive (for past-year and past-month use), but they are not significant.

Most of these effects do not appear to subside. The estimates are less likely to be statistically significant in the years farther out from the divorce, but this is more due to larger standard errors. The estimates themselves generally remain nearly as large in magnitude.

What also is relevant is that most of the estimates that are significant exceed the corresponding before-after estimated effect from Table 2. For example, for past-year marijuana use, the before-after estimated effect is 8.2 percentage points, while it gets beyond 12 percentage points after the divorce. There are two cases in which the before-after estimate is significant for an outcome in Table 2 and the estimates are not significant in any divorce-timing periods in Table 3 for that outcome—past-year cigarette use and past-month marijuana use. In the case of past-year cigarettes use, the magnitudes of the coefficient estimates in Table 3 still exceed the before-after estimate in Table 2—but they do not attain statistical significance.

The reason for the estimates being larger in most cases in Table 3 relative to Table 2 is that substance use is higher in some cases (again, not always by significant amounts) in the years leading up to the divorce. This indicates that the before-after estimates may understate the true effect of the divorce.

## **DISCUSSION**

This study provides an analysis of how the parental divorce process affects youth substance use at various stages relative to the divorce. The analysis avoids the common problem of unobserved heterogeneity found in most previous studies by using individual fixed-effects. And, the study improves on the longitudinal studies by examining whether there are effects in the few years leading up to the divorce and whether any effects persist or subside as time passes from the divorce.

There are a few potential weaknesses of this study. First, these results could partly be the result of the teenage substance use contributing to the parents' divorce. Previous methods would have had this same problem. Thus, the method presented in this paper still represents an improvement over the previous studies that had either compared teenagers from non-intact to intact families or had used difference-in-difference with the negative effects of the divorce process potentially already being realized in the pre-divorce measure.

Second, it may be the initial parental separation and not the divorce that most traumatic for children/youth. This study does consider a period well before the divorce, but delays from a separation to a divorce could cause the study to miss some of the effects from the divorce process. It is conceivable that some respondents indicated the separation as the "effective" divorce date.

Third, by the nature of the analysis, with individual fixed effects and substance-use outcomes that are, for some, the same across all periods, we are forced to use a linear probability model. Normally, logit or probit models are more ideal when there is a dichotomous outcome. Using a linear probability model can give slightly different



results for outcomes that have predicted probabilities close to zero or one. Fortunately, all but one outcome is far enough away from zero or one to avoid any such problems.

While the results vary for the different measures of use for a given substance, they indicate that youth from families experiencing a divorce are already at an increased risk of engaging in alcohol use at least 2-to-4 years before the divorce. After the divorce, youth are more likely to engage in alcohol, marijuana, and other drug use, with the effect generally persisting as time passes from the divorce. Thus, the effects of the divorce process on youth substance use are not temporary.

One implication of these results is that comparing children's and youth's outcomes from before to after a divorce could understate the impact of the divorce itself, as the subjects already have been affected by the divorce process in the few years leading up to the divorce. Furthermore, if the post-divorce outcome is measured soon after the divorce, then the effects may understate the long-term effects, which, in some cases, are higher than the immediate effects after the parental divorce.

The finding that youth are affected before the divorce occurs suggests that the processes that lead to a divorce adversely impact the children. This raises concern about the effectiveness of policies that are aimed at preventing divorces, as much damage to the children may already have been realized by that point. Perhaps more efforts should be directed towards improving family processes to avoid the poor family relations and marital conflict that lead to divorces.

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**Table 1. Weighted means.**

<b>Variables</b>	<b># observations</b>	<b>Mean</b>
<b>Outcomes</b>		
Used alcohol in past year	10,208	0.687
Used alcohol in past month	11,620	0.528
Had heavy alcohol use in past month	11,620	0.303
Smoked cigarettes in past year	10,220	0.477
Smoked cigarettes in past month	11,632	0.391
Smoked cigarettes heavily in past month	11,632	0.236
Used marijuana in past year	10,185	0.300
Used marijuana in past month	11,606	0.210
Had heavy marijuana use in past month	11,606	0.066
<b>Parental divorce timing variables</b>		
4-or-more years before the divorce (reference category)	10,208	0.038
2-4 years before the divorce	10,208	0.040
0-2 years before the divorce	10,208	0.056
0-2 years after the divorce	10,208	0.059
2-6 years after the divorce	10,208	0.132
6+ years after the divorce	10,208	0.151
10-or-more years after the divorce	10,208	0.524
<b>Age variables</b>		
Age 15 (reference category)	10,208	0.073
Age 16	10,208	0.109
Age 17	10,208	0.143
Age 18	10,208	0.172
Age 19	10,208	0.169
Age 20	10,208	0.169
Age 21	10,208	0.165
<b>Survey Year variables</b>		
1998	10,208	0.144
1999	10,208	0.171
2000	10,208	0.171
2001	10,208	0.168
2002	10,208	0.138
2003	10,208	0.105
2004	10,208	0.067
2005	10,208	0.032
2006	10,208	0.003

**Other variable in models**

Weeks since the last interview	10,208	57.2
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**Other variables not in model**

Male	10,208	0.476
Black	10,208	0.100
Hispanic	10,208	0.104
Age at time of divorce	10,208	9.8
Completed 12 <sup>th</sup> grade by age 20	10,204	0.858
Completed at least 1 year of college by age 22	10,204	0.503
Completed 4 years of college by age 24	10,204	0.234
Initiated cigarette use by age 15	10,204	0.599
Initiated cigarette use by age 18	10,124	0.743
Initiated alcohol use by age 15	10,204	0.711
Initiated alcohol use by age 18	10,124	0.907
Initiated marijuana use by age 15	10,204	0.396
Initiated marijuana use by age 18	10,124	0.609

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Note: Observations from 1997 did not have past-year use measures.

**Table 2. Coefficient estimates based on a simple model with a post-divorce indicator from individual fixed-effect linear probability models.**

	Alcohol			Cigarette			Marijuana		
	Past-year use	Past-month use	Past-month heavy use	Past-year use	Past-month use	Past-month heavy use	Past-year use	Past-month use	Past-month heavy use
Observation is post-divorce	0.071** (0.025)	0.047 (0.025)	0.075*** (0.024)	0.054** (0.023)	0.032 (0.022)	0.012 (0.019)	0.082*** (0.025)	0.053** (0.022)	0.025* (0.013)
<b>Age variables</b>									
Age 16	0.061* (0.030)	0.057* (0.026)	0.052** (0.023)	0.052** (0.024)	0.013 (0.020)	0.009 (0.019)	0.055** (0.026)	0.041** (0.020)	0.016 (0.011)
Age 17	0.129** (0.044)	0.120** (0.042)	0.079** (0.038)	0.081** (0.036)	0.016 (0.032)	0.014 (0.030)	0.091** (0.042)	0.054 (0.034)	0.010 (0.020)
Age 18	0.200** (0.061)	0.197** (0.060)	0.140** (0.055)	0.100** (0.049)	0.010 (0.044)	0.034 (0.043)	0.113* (0.059)	0.0780* (0.047)	0.017 (0.029)
Age 19	0.241** (0.077)	0.250** (0.077)	0.164** (0.071)	0.116* (0.064)	0.002 (0.057)	0.020 (0.056)	0.100 (0.077)	0.070 (0.061)	0.020 (0.038)
Age 20	0.254** (0.095)	0.261** (0.095)	0.165* (0.088)	0.104 (0.078)	-0.029 (0.070)	0.002 (0.069)	0.075 (0.095)	0.048 (0.076)	0.019 (0.047)
Age 21	0.335** (0.114)	0.355** (0.113)	0.244** (0.105)	0.116 (0.092)	-0.055 (0.083)	-0.029 (0.082)	0.055 (0.113)	0.050 (0.090)	-0.002 (0.055)
Number of observations	10,208	11,620	11,620	10,220	11,632	11,632	10,185	11,606	11,606
R-squared	0.061	0.119	0.079	0.011	0.040	0.059	0.012	0.015	0.016

Note: The number in parentheses is the standard error. Other variables in the model include year dummy variables. The past-year use outcomes are more precisely use since the last interview, which is roughly one year. The models for the past-year use include a variable for the number of days since the last interview. \*\* and \* indicate statistical significance at the 1 and 5% levels.

**Table 3. Coefficient estimates on divorce/separation timing variables from individual fixed-effect linear probability models.**

	Alcohol			Cigarette			Marijuana		
	Past-year use	Past-month use	Past-month heavy use	Past-year use	Past-month use	Past-month heavy use	Past-year use	Past-month use	Past-month heavy use
<b>Divorce-timing variables (reference category is 4-or-more years before the divorce)</b>									
2-4 years before the divorce	0.084* (0.041)	0.069* (0.034)	0.038 (0.030)	0.022 (0.039)	0.020 (0.027)	-0.015 (0.022)	0.015 (0.033)	0.005 (0.024)	0.003 (0.021)
0-2 years before the divorce	0.131** (0.046)	0.085* (0.041)	0.035 (0.036)	0.047 (0.045)	0.057 (0.034)	-0.018 (0.027)	0.053 (0.039)	0.005 (0.028)	-0.007 (0.020)
0-2 years after the divorce	0.181** (0.052)	0.118* (0.046)	0.111** (0.042)	0.093 (0.049)	0.063 (0.039)	-0.010 (0.033)	0.121** (0.047)	0.048 (0.035)	0.015 (0.025)
2-6 years after the divorce	0.216** (0.058)	0.155** (0.052)	0.112* (0.048)	0.087 (0.055)	0.076 (0.044)	-0.006 (0.038)	0.128* (0.053)	0.056 (0.040)	0.025 (0.029)
6-10 years after the divorce	0.217** (0.067)	0.163** (0.061)	0.096 (0.057)	0.081 (0.063)	0.056 (0.053)	-0.014 (0.046)	0.108 (0.063)	0.004 (0.049)	0.023 (0.034)
10-or-more years after the divorce	0.208** (0.075)	0.168* (0.070)	0.115 (0.066)	0.049 (0.071)	0.009 (0.062)	-0.028 (0.054)	0.096 (0.071)	0.000 (0.057)	0.010 (0.038)
<b>Age variables (reference category is age 15)</b>									
Age 16	0.0613* (0.030)	0.056* (0.026)	0.051* (0.023)	0.053* (0.023)	0.014 (0.020)	0.009 (0.019)	0.055* (0.026)	0.042* (0.020)	0.017 (0.011)
Age 17	0.129** (0.044)	0.120** (0.042)	0.077* (0.038)	0.082* (0.036)	0.017 (0.032)	0.016 (0.030)	0.091* (0.041)	0.055 (0.033)	0.012 (0.020)
Age 18	0.201** (0.060)	0.198** (0.059)	0.138* (0.055)	0.101* (0.049)	0.014 (0.044)	0.036 (0.043)	0.114 (0.059)	0.079 (0.047)	0.019 (0.029)
Age 19	0.243** (0.077)	0.251** (0.077)	0.161* (0.071)	0.117 (0.064)	0.006 (0.057)	0.022 (0.056)	0.101 (0.077)	0.071 (0.061)	0.023 (0.038)
Age 20	0.257** (0.095)	0.262** (0.095)	0.162 (0.088)	0.105 (0.078)	-0.024 (0.070)	0.005 (0.069)	0.076 (0.094)	0.049 (0.075)	0.022 (0.047)
Age 21	0.338** (0.114)	0.356* (0.113)	0.241* (0.104)	0.117 (0.092)	-0.051 (0.083)	-0.026 (0.082)	0.056 (0.113)	0.051 (0.090)	0.001 (0.055)
Number of observations	10,208	11,620	11,620	10,220	11,632	11,632	10,185	11,606	11,606
R-squared	0.063	0.120	0.079	0.012	0.042	0.060	0.012	0.016	0.016

Note: The number in parentheses is the standard error. Other variables in the model include dummy variables. The past-year use outcomes are more precisely use since the last interview, which is roughly one year. The models for the past-year use include a variable for the number of days since the last interview. \*\* and \* indicate statistical significance at the 1 and 5% levels.