MARITAL STATUS, MARITAL TRANSITIONS, AND SMOKING BEHAVIOR: GENDER AND LIFE COURSE CONSIDERATIONS*

Debra Umberson

and

Hui Liu

Department of Sociology and Population Research Center

University of Texas at Austin

***Presented at the Annual Meeting of the Population Association of America, Los Angeles, California, 2006. Please contact the authors for a revised version of this paper (Umberson@mail.la.utexas.edu).**

Marital Status, Marital Transitions, and Smoking Behavior:

Gender and Life Course Considerations

Abstract:

We analyze national longitudinal data to assess the impact of marital status and marital transitions on subsequent change in smoking behavior. Results from Zero-Inflated Poisson regressions show that, compared to the married, the odds of smoking are significantly greater for the continually never-married and continually divorced/separated men and women. The transition into marriage has no impact on subsequent immediate change in smoking—providing no support for the idea that becoming married promotes health behavior change immediately. However, the positive effect of transition into first marriage on health behavior is accumulative as marriage duration increases suggesting that marriage may have a cumulative positive impact on smoking behavior over the life course. Becoming divorced/separated exacerbates smoking among men but not women, having implications for long-term gender and marital status differences in health. Finally, life course stage is more important than gender in explaining how the transition to widowhood affects smoking behavior.

We work from a gender and life course perspective and analyze national longitudinal data to assess the impact of marital status and marital transitions on subsequent change in the smoking behavior of men and women. This assessment sheds light on arguments that marriage protects health and/or that marital dissolution undermines health and considers that these effects may vary for men and women and at different points in the life course.

Prior work on marital status, marital transitions, and health status suggests that health behaviors may mediate marital status/transition effects on health outcomes. In this study, we focus on smoking because this is the health behavior that is most strongly associated with poor health and mortality outcomes (Rogers, Hummer & Nam, 2000). Moreover, smoking is the single most preventable predictor of premature mortality in the United States (Rogers, Hummer, Krueger and Pampel, 2005). Cigarette smoking is associated with cardiovascular disease, cancer, and respiratory diseases (see review in Ross, 2000).

BACKGROUND

This study is based in the broader literature on gender, social ties, health, and mortality. Clearly, involvement in social relationships reduces mortality risk for individuals and health behaviors constitute one of the major mechanisms linking social involvement to health and mortality (House, Landis and Umberson, 1988). Involvement in social relationships, particularly the marital relationship, is associated with more health-promoting behaviors and fewer risk-taking behaviors (Umberson, 1987, 1992). Yet it is important to note that the married do not excel in all health behaviors. While the married smoke and drink less alcohol than the unmarried, the married are more likely to be overweight and less likely to exercise (Ross, 2000). These latter results emphasize the need to examine each health behavior as a unique process.

A better understanding of the link between marital ties and health behavior has implications for population health. Rowe and Kahn argue that "the role of aging per se…has often been overstated and that a major component of many age-associated declines can be explained in terms of life style, habits, diet, and an array of psychosocial factors extrinsic to the aging process" (1987: 143).

While a significant body of work establishes the link between marital status and health behavior, previous studies do not consider whether marital status is more strongly associated with specific health behaviors at different points in the life course. Moreover, previous research tends to focus on marital status, per se, rather than considering the subtle meanings of marital ties in terms of continuous marital status, marital duration, marital transitions (in and out of marriage) via divorce versus widowhood, or marital duration prior to marital dissolution.

In the present study, we consider how various aspects of marital ties affect a specific health behavior (smoking) and whether it does so in different ways for men and women over the life course. We choose to focus on smoking because it is the health behavior that is most strongly associated with health outcomes (Rogers et al., 2005).

Gender

While the married exhibit lower mortality rates than the unmarried, this benefit appears to be greater for men than women. Gender shapes social experiences over the life course in ways that influence marital ties as well as health behaviors.

Men and women differ in both the existence and the quality of marital ties. With advancing age, women become increasingly more likely than men to be divorced or widowed. In terms of the experience of marriage, men are more likely than women to report having no close social ties outside of that with their spouse and, with advancing age, men become more likely than women to be married (Umberson et al 1996). Women tend to report lower marital quality than do men in

large surveys, however, these effects may depend on life course position. Among the married who are about 30 or younger, men and women report similar levels of marital strain but, after age 40, women report more marital strain than men (Umberson and Williams, 2005).

Gender and Health Behavior

Most of us have stereotypes about gender and health behavior—with the general view that men take more risks than women. There is also the stereotype that women play a greater role in taking care of others and trying to promote healthy behaviors. There is, in fact, strong evidence for both of those stereotypes. Among the leading causes of death, the largest gender differences occur for causes of death in which behavior is strongly implicated. For five of the six leading causes of death with the largest gender differences, men exceed women and at least two of those causes directly reflect the risk of smoking: cancer and cerebrovascular disease. Moreover, chronic liver disease/cirrhosis of the liver, another leading (and gender differentiated) cause of death, is exacerbated by smoking. In fact, the gender gap in mortality is smaller than it's ever been—partly because women's smoking behaviors have become more similar to men's over the past several decades (Pampel, 2003).

How does smoking behavior differ for men and women? At most ages, women are less likely than men to smoke, women smoke fewer cigarettes, inhale less deeply, and are more likely to use filtered cigarettes. Men and women are most similar in smoking after age 65.

Gender and Health Behavior Over the Life Course

Social involvement has stronger effects on the health and mortality of men than women and some of this difference may occur because the marital tie has stronger deterrent effects on risky behavior for men than for women (House et al., 1988). In fact, women are more likely than men to attempt to influence the health behavior of significant others (Umberson 1992). Gender is associated with health behavior, in part, because of gendered social roles. For example, men are

more likely to react to stress with increased alcohol consumption (a behavior often associated with masculinity) while women are more likely to become depressed (Rosenfield, 1999). Taken together, these findings suggest the possibility of gender differences in the link between marital ties and smoking behavior.

A gender and life course perspective further suggests that being married may affect smoking behavior of men and women differently depending on life course position. For example, being married may impose more restrictions on smoking behavior for men than women but only at younger ages when men are more likely to take risks or when women are more likely to try to affect the behavior of fathers around young children. Alternatively, widowhood may exacerbate smoking more for men but only at older ages when one's spouse had played much more of a role in regulating routine health habits—particularly those that are associated with heart disease.

Marital Status, Transitions, and Durations

Marital status is a complex variable that may involve numerous transitions (through divorce and widowhood) and durations (that probably vary, on average, for men and women). We emphasize the possibility of gender differences in the impact of marital status, marital durations, and marital transitions on smoking behavior. Moreover, such gender differences may further depend on age or life course position.

THE PRESENT STUDY

The research literature raises three basic questions that we are addressing in our present study:

1. Does marriage (marital status, marital duration, and marital transitions) affect the smoking behavior of men and women?
2. Are there gender differences in these linkages?
3. Do marital status/transitions affect the smoking behavior of men and women in different ways at different ages.

DATA AND MEASURES

Data. We analyze data from the Americans' Changing Lives Surveys collected at three time points over an eight-year period (1986-1994). We pool the three waves of data which provides two waves with information on the respondent at the current survey wave T2 and the previous wave T1. We adjust the standard errors for the clustering of observations within individuals. Three samples are drawn from the data in order to examine the effects of consistent marital status (n= 4,550 individuals in the same marital status over the study period), transition out of marriage (n= 2,975) and transition into marriage (n= 2,072). The continually married are the reference group for analyses of consistent marital status and transition out of marriage. The continually unmarried are the reference group for analysis of transition into marriage.

Measures. *Smoking.* We consider smoking in two ways: in terms of the odds of smoking and in terms of amount smoked. We use the number of cigarettes smoked per day to measure respondents' smoking behavior. It is truncated to 50 if more than 50 cigarettes per day is reported. Between 76 and 83 percent respondents reported zero cigarette smoked per day in the three waves. Missing values on smoking at Time 1 are replaced with the general average mean.

Marital status and marital transitions. We consider eight categories of marital continuity and changes between Time 1 and Time 2 in our analysis: 1) continually married, (2) continually never married, (3) continually divorced or separated, (4) continually widowed, (5) married to divorced or separated, (6) married to widowed, (7) never married to married, and (8) divorced or separated or widowed to remarried. Using the continually married/unmarried as the reference group, we include dummy variables representing other marital continuity and transitions.

Life course and other covariates. Our primary proxy for life course position is age at Time 1 of the respondent, measured in years. Final models are also adjusted for the effect of additional sociodemographic characteristics that may be associated with marital transitions and smoking

behavior including gender (0 = female, 1 = male), race (0 = Other, 1 = Black), education (number of years completed) as well as Time 1 value on family income ($1,000s). Both smoking behavior at Time 1 and years elapsed between Time 1 and Time 2 are also associated with risk of marital transitions as well as smoking behaviors and thus included as covariates in the analysis. Table 1 shows the means and standard deviations of all variables in the analysis for each sub-sample. All continuous independent variables such as age, education, and family income, are centered at the group means.

Table 1 about here

Statistical Model. Because more than half of the respondents reported zero cigarettes smoked per day in the three waves of ACL data, the distribution of the dependent variable is inflated by zero values. This inflated distribution of the data requires a statistical model able to handle excess zero values. We use Zero-Inflated Poisson (ZIP) regression model to account for excess non-smokers in the data which provides with predictions of the odds of non-smoking as well as amount smoked.

The dependent variable, smoking at Time 2 can be described by a Zero-Inflated Poisson distribution such as:

$$\mathrm{P}(Y_i = y_i | p_i, \lambda_i) = \begin{cases} p_i + (1 - p_i)e^{-\lambda_i} & \text{if } y_i = 0 \\ (1 - p_i)\frac{e^{-\lambda_i}\lambda_i^{y_i}}{y_i!} & \text{if } y_i > 0 \end{cases}$$

Where, Yi is smoking at Time 2, which is conditional on two parameters, pi and λi. pi denotes the probability of non-smoking and λi is the parameter generalizing the Poisson distribution of smoking count. In this analysis, we use logistic function to estimate pi and Poisson model to estimate λi

(For more information of this model, see Lambert 1992; Bohning et al. 1999; Chin and Quddus 2003). The equations for the estimations of ZIP model could be expressed as:

$$\log\left(\frac{p_i}{1-p_i}\right) = X'B_1$$

$$\log \lambda_i = X'B_2$$

Where X' is the vector of independent variables including marital status and transition variables and all other covariates such as gender, race, education, years elapsed between Time 1 and Time 2, Time 1 values on age, household income and smoking as well as all interaction terms. B1 and B2 are the corresponding coefficient vectors.

RESULTS

Marital Status

Results from Zero-Inflated Poisson regressions in Model 1 of Table 2 show that, compared to the married, the odds of smoking are significantly greater for the continually never-married and the continually divorced/separated. This pattern holds for both men and women and could support the claim that marital ties serve a protective function for health or that being divorced/separated is more conducive to risky health behavior (e.g., because of the absence of social support or social control or due to stress).

Table 2 about here

Model 2 of Table 2 shows that the effect of continually in widowhood on both the risk and amount of smoking depends on life course position. Among those younger than 73, continuity in widowhood is negatively associated with non-smoking odds while among those older than 73, continuity in widowhood is positively associated with non-smoking odds (e.g negatively associated with probability of smoking). Similarly, below age 54, continuity in widowhood is positively associated with smoking count while above age 54, continuity in widowhood is negatively associated with smoking count. In other words, continuity in widowhood increases both the risk

of smoking and amount smoked for the younger individuals but it deters smoking for the older individuals. In terms of the amounts of the associations, the negative effect of continuity in widowhood on smoking becomes more and more profound as individuals age while the positive effect of continuity in widowhood on smoking reduces as individuals age.

The Transition out of Marriage

We find that transitions out of marriage do affect smoking behavior. These findings fit with recent research suggesting that the stress of marital dissolution undermines health significantly more than marriage benefits health (Williams & Umberson, 2004). Moreover, becoming divorced or separated increases the probability of smoking for men (indicated by the significant negative interaction effect of transition into divorced/separated with gender in Model 2 of Table 3) but not for women (indicated by the non-significant main effect of transition into divorced/separated in Model 2 of Table 3) suggesting that the stress of marital dissolution has stronger effects on the smoking behavior of men than women. This finding fits with arguments that marriage provides more social control of men's behaviors than women's or that the stress of divorce/separation is greater for men than women when the outcome is health behavior. This has important implications for gender differences in the long-term impact of marital dissolution on health and mortality and implies a greater risk for men than women.

Table 3 about here

The transition to widowhood affects smoking behavior but the nature of the effect depends on one's position in the life course (illustrated in Model 3 of Table 3). Becoming widowed at younger age is associated with an increase in the amount that one smokes but, at olderage , becoming widowed is associated with a decrease in the amount that one smokes. The significant three way interaction term in Model 4 of Table 3 indicates that the life course

position where the effect of becoming widowed on amount of smoking converses also depends on gender. For men, the conversion point of age is negative which means that transition into widowhood always increases the amount of smoking of men at any life course position. However, for women, becoming widowed prior to about age 64 is associated with an increase in the amount that one smokes but, after age 64, becoming widowed is associated with a decrease in the amount that one smokes. Based on a life course perspective, we suggest that, at younger ages, the stress of widowhood exacerbates smoking (much as divorce is associated with smoking). At older ages, the loss of a spouse may be more likely to serve as a reminder of personal mortality and vulnerability, and lead individuals to reduce smoking in an effort to extend their own longevity. This symbolic meaning of widowhood may override the stress of widowhood in its impact on smoking behavior. We plan to collect qualitative data to further explore this and other possible explanations for these findings.

The Transition into Marriage

We find that the transition into first marriage or remarriage is not associated with change in the smoking behavior of men or women (shown in Model 1 of Table 4). This suggests that the transition into marriage, per se, does not provide any significant immediate benefit in terms of smoking behavior, at least over the 8 year study period that we examine. However, this conclusion needs some qualifications when we take into account the marital duration.

Table 4 about here

Marital Duration

The meaning and experience of becoming married is partly influenced by the duration of one's marriage. We find that although transition into marriage does not affect smoking behavior immediately, its effect is accumulative as time goes on. Model 2 of Table 4 shows that the longer duration of transition into (and stay in) first marriage, the less amount of cigarettes

the individuals tend to smoke relative to those continually married. That is, the positive impact of the transition into marriage on smoking may be stronger with increasing marital duration. These effects of marital duration are similar for men and women across the life course.

Additional Analyses

We will be extending this analysis to further address selection bias in our models (selection into and out of marriage). This will involve a Heckman-type correction in our estimated models (see Umberson, et al., 2005). In addition, we will be considering how time spent in the divorced or married status may shape the impact of those statuses on smoking behavior. Based on research showing that the adverse effects of marital dissolution for physical health are greater at shorter durations, we expect that the adverse impact of being continually divorced/separated or widowed on smoking will also be stronger at shorter durations.

CONCLUSIONS

A focus on smoking allows us to explore a specific behavioral mechanism through which marital status and marital transitions eventually affect health and mortality. Our results suggest several conclusions regarding the association of marital status & marital transitions with smoking behavior for men and women over the life course.

First, we find that the transition into marriage has no impact on subsequent change in smoking—but this is a short-term view of marital benefits. Taking a long term view, we find that marital duration is associated with a reduction in the odds of smoking and in the amount of smoking—suggesting that marriage may have a cumulative positive impact on smoking behavior over the life course (although we cannot rule out the possibility of selection bias with better behavior being associated with a stronger propensity to stay married). Second, our results on the transition to divorce suggest that marital status differences in health may reflect

the strains of marital dissolution more than they reflect the benefits of marriage, per se. Third, the strains of marital dissolution exacerbate smoking among men but not women, having implications for long-term gender and marital status differences in overall health and mortality. Finally, life course stage is more important than gender in explaining the association of widowhood with smoking behavior.

These findings correspond closely to our recent conclusions concerning the impact of marital status and marital transitions on overall health status (Williams & Umberson, 2004) and further suggest that certain health behaviors may be a key explanatory mechanism linking marital status and marital transitions with health outcomes.

FUTURE RESEARCH

There is a common notion that marriage is a panacea for health, partly because it benefits health behavior. But social ties are not *necessarily* associated with *better* health behavior. Social ties may be stressful or they may encourage health-compromising behavior. For example, Ross' work shows that being married is associated with greater body weight and lower physical activity levels. We suspect that the balance of costs and benefits depends on which health behavior, which relationship, and which life stage we examine.

We are currently working on a larger project in which the major goal is to consider how various social ties (e.g., with spouse, child, parent, friends, other relatives), various health behaviors (smoking, drinking, exercise, diet), and the different linking mechanisms (e.g., social control, mental health, social support) differ for men and women over the life course. Studies consistently show that men's health behaviors benefit more from marriage than do women's. Gender differences are not yet well understood. It may be that women benefit more from other types of relationships—for example, with close friends, adult children, or religious ties.

The key questions are: Which relationships matter, when do they help, when do they hurt, and how does the process unfold?

REFERENCES

House, James S., Karl R. Landis and Debra Umberson. 1988. "Social relationships and health." Science 241: 540-545.

Pampel, F.C. (2003). "Declining Sex Differences in Mortality from Lung Cancer in High-Income Nations." Demography 40:45-65.

Rogers, R.G., R.A. Hummer, & C.B. Nam (2000). *Living and Dying in the USA: Behavioral, Health, and Social Differentials of Adult Mortality*. San Diego: Academic Press.

Rogers, R.G., R.A. Hummer, P.M. Krueger, and F.C. Pampel (2005). "Mortality Attributable to Cigarette Smoking in the United States." Population and Development Review 31(2): 259-292.

Ross, Catherine. 2000. "Walking, Exercise, and Smoking: Does Neighborhood matter." Social Science and Medicine 51:265-274.

Rowe, J.W. and R.L. Kahn. 1987. "Human Aging: Usual and Successful." Science 237:143-149.

Umberson, D., and K. Williams (2005). "Marital Quality, Health, and Aging: Gender Equity?" Journal of Gerontology: Social Sciences 60B.

Umberson, D., K. Williams, D.P. Powers and M.D. Chen (2005). "As Good As It Gets? A Life Course Perspective on Marital Quality." *Social Forces* 84:493-511.

Umberson, Debra. 1992a. "Gender, Marital Status and the Social Control of Health Behavior." Social Science and Medicine 34(8): 907-917.

Williams, K. and D. Umberson (2004). "Marital Status, Marital Transitions, and Health: A Gendered Life Course Perspective." *Journal of Health and Social Behavior* 45:81-98.

TABLE 1. Means and Standard Deviations for All Variables in the Analysis for Each Sub-sample

	Marital Status Continuality		Transition out of Marriage		Transition into Marriage	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Continually married	0.59	0.49	0.90	0.30	---	---
Continually never-married	0.09	0.29	---	---	0.21	0.40
Continually divorced/separated	0.13	0.33	---	---	0.28	0.45
Continually widowed	0.19	0.39	---	---	0.42	0.49
Never-married to married	---	---	---	---	0.03	0.17
Div/sep/wid to remarried	---	---	---	---	0.06	0.24
Married to divorced/separated	---	---	0.05	0.21	---	---
Married to widowed	---	---	0.06	0.23	---	---
Smoking T1	4.81	9.98	4.73	10.04	5.13	10.11
Smoking T2	2.99	7.86	2.86	7.81	3.28	8.11
Years between T1 and T2	3.87	0.99	3.91	1.00	3.87	0.99
Age T1	53.91	16.67	52.04	15.64	54.47	18.17
Male	0.37	0.48	0.43	0.49	0.27	0.44
African-American	0.28	0.45	0.22	0.41	0.38	0.49
Education in years	11.86	3.35	12.24	3.13	11.33	3.53
Household Income T1 ($1,000)	27.80	24.97	35.62	26.34	15.72	16.45
Number of observations	N=4,550		N=2,975		N=2,072	

TABLE 2. Zero-Inflated Poisson Regression Coefficients from Models Estimating the Effects of Continuity in an Unmarried Status T1-T2 on T2 Smoking Odds and Counts (n=4,550)

	Model 1	Model 2
Log of Non-smoking Odds		
Continually unmarried (0=Continually married)		
Continually never-married	-0.422*	-0.432*
Continually divorced/separated	-0.499***	-0.391*
Continually widowed	-0.245	-0.487*
Interaction of continually unmarried with age		
Continually never-married X age	---	0.003
Continually divorced/separated X age	---	0.015
Continually widowed X age	---	0.025*
Other Covariates		
Smoking at T1	-0.185***	-0.185***
Years between TIME 1 and T2	0.151**	0.151**
Age at T1	0.029***	0.024***
Gender (1 = Male)	0.035	0.018
Race (1 = Black)	-0.478***	-0.475***
Education (years)	0.051*	0.050*
Household income T1 ($1,000)	0.002	0.001
Constant	2.367***	2.342***
Log of Smoking Counts		
Continually unmarried (0=Continually married)		
Continually never-married	-0.043	-0.044
Continually divorced/separated	0.027	0.044
Continually widowed	-0.093	-0.016
Interaction of continually unmarried with age		
Continually never-married X age	---	-0.000
Continually divorced/separated X age	---	0.002
Continually widowed X age	---	-0.010*
Other Covariates		
Smoking at T1	0.029***	0.029***
Years between T1 and T2	-0.542***	-0.541***
Age at T1	0.001	0.002
Gender (1 = Male)	0.036	0.041
Race (1 = Black)	-0.100*	-0.103*
Education (years)	0.011	0.012
Household income T1 ($1,000)	0.001	0.000
Constant	3.998***	4.005***
Log pseudo-likelihood	-5769.232	-5758.463

[a] * $p \leq .05$ **$p \leq .01$ ***$p \leq .001$ (two-tailed tests)

[b] Age, education, household income are all centered at group means.

TABLE 3. Zero-Inflated Poisson Regression Coefficients from Models Estimating the Effects of Transitions Out of Marriage T1 to T2 on T2 Smoking Odds and Counts (n=2,975)

	Model 1	Model 2	Model 3	Model 4
Log of Non-smoking Odds				
Transitions out of marriage (0=continually married)				
Married to divorced/separated	-0.879***	-0.358	-0.961***	-0.732*
Married to widowed	-0.057	0.081	0.101	0.138
Interaction of transition out of marriage with gender				
Married to divorced/separated X gender	---	-1.094*	---	-0.607
Married to widowed X gender	---	-0.739	---	-0.460
Interaction of transition out of marriage with age				
Married to divorced/separated X age	---	---	-0.007	-0.030
Married to widowed X age	---	---	-0.012	-0.005
Three way interactions				
Married to divorced/separated X gender X age	---	---	---	0.040
Married to widowed X gender X age	---	---	---	-0.011
Other Covariates				
Smoking count at T1	-0.184***	-0.185***	-0.184***	-0.184***
Years between T1 and T2	0.100	0.099	0.100	0.099
Age at T1	0.025***	0.026***	0.026***	0.026***
Gender (1 = Male)	0.013	0.118	0.016	0.118
Race (1 = Black)	-0.456**	-0.461**	-0.456**	-0.464**
Education (years)	0.079**	0.079**	0.079**	0.078**
Household income T1 ($1,000)	-0.000	-0.000	-0.000	-0.000
Constant	2.521***	2.485***	2.523***	2.483***
Log of Smoking Counts				
Transitions out of marriage (0=continually married)				
Married to divorced/separated	0.006	-0.045	0.081	0.020
Married to widowed	0.099	0.109	0.249*	0.251*
Interaction of transition out of marriage with gender				
Married to divorced/separated X gender	---	0.100	---	0.131
Married to widowed X gender	---	-0.063	---	-0.248
Interaction of transition out of marriage with age				
Married to divorced/separated X age	---	---	0.005	0.005
Married to widowed X age	---	---	-0.018***	-0.021***
Three way interactions				
Married to divorced/separated X gender X age	---	---	---	0.001
Married to widowed X gender X age	---	---	---	0.024**
Other Covariates				
Smoking count at T1	0.027***	0.027***	0.027***	0.027***
Years between T1 and T2	-0.546***	-0.547***	-0.544***	-0.545***
Age at T1	0.001	0.001	0.001	0.001
Gender (1 = Male)	0.052	0.044	0.056	0.044
Race (1 = Black)	-0.165**	-0.164**	-0.166**	-0.162**
Education (years)	0.010	0.010	0.011	0.011
Household income T1 ($1,000)	0.001	0.001	0.001	0.001
Constant	4.072***	4.078***	4.065***	4.073***
Log pseudo-likelihood	-3587.951	-3584.301	-3578.964	-3573.13

[a] * $p \leq .05$ **$p \leq .01$ ***$p \leq .001$ (two-tailed tests)

[b] Age, education, household income are all centered at group means.

TABLE 4. Zero-Inflated Poisson Regression Coefficients from Models Estimating the Effects of Transition Into Marriage T1-T2 on T2 Smoking Odds and Counts (n=2,072)

	Model 1	Model 2
Log of Non-smoking Odds		
Transition into marriage (0=Continually unmarried)		
Never-married to married	0.202	0.958
Divorced/separated/widowed to married	0.616	0.847*
Interaction of transition into marriage with marriage duration		
Never-married to married X marriage duration	---	-0.333
Divorced/separated/widowed to married X marriage duration	---	-0.044
Other Covariates		
Smoking at T1	-0.195***	-0.196***
Years between T1 and T2	0.187*	0.193*
Age at T1	0.035***	0.036***
Gender (1 = Male)	-0.029	-0.012
Race (1 = Black)	-0.426**	-0.426**
Education (years)	0.021	0.020
Household income T1 ($1,000)	0.004	0.004
Constant	1.879***	1.856***
Log of Smoking Counts		
Transition into marriage (0=Continually unmarried)		
Never-married to married	0.001	0.101
Divorced/separated/widowed to married	0.006	-0.002
Interaction of transition into marriage with marriage duration		
Never-married to married X marriage duration	---	-0.015***
Divorced/separated/widowed to married X marriage duration	---	0.004
Other Covariates		
Smoking at T1	0.031***	0.032***
Years between T1 and T2	-0.563***	-0.565***
Age at T1	-0.000	0.000
Gender (1 = Male)	0.035	0.031
Race (1 = Black)	-0.072	-0.066
Education (years)	0.012	0.011
Household income T1 (1,000)	-0.002	-0.001
Constant	3.966***	3.967***
Log pseudo-likelihood	-2938.99	-2933.956

[a] * $p \leq .05$ **$p \leq .01$ ***$p \leq .001$ (two-tailed tests)

[b] Age, education, household income are all centered at group means.