Journal of Developmental and Life-Course Criminology (2023) 9:54–70
https://doi.org/10.1007/s40865-022-00219-6

ORIGINAL ARTICLE

Associations Between Cohabitation, Marriage, and Suspected Crime: a Longitudinal Within-Individual Study

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Received: 21 February 2022 / Revised: 16 November 2022 / Accepted: 17 November 2022 /
Published online: 28 November 2022

Abstract

The effects of marriage on criminal behavior have been studied extensively. As marriages today are typically preceded by cohabiting relationships, there is a growing need to clarify how different relationship types are associated with criminality, and how these effects may be modified by relationship duration, partner's criminality, and crime type. We used Finnish longitudinal register data and between- and within-individual analyses to examine how cohabitation and marriage were associated with suspected crime. The data included 638,118 residents of Finland aged 0–14 in 2000 and followed for 17 years for a suspected crime: having been suspected of violent, drug, or any crime. Between-individual analyses suggested that those who were cohabiting or married had a 40–65% lower risk of being suspected of a crime compared to those who were single, depending on the type of crime. The within-individual analysis showed a 25–50% lower risk for suspected crime when people were cohabiting or married compared to time periods when they were single. Those in a relationship with a criminal partner had 11 times higher risk for suspected crime than those in a relationship with a non-criminal partner. Forming a cohabiting relationship with a non-criminal partner was associated with reduced criminality. The risk reduction was not fully explained by selection effects due to between-individual differences. Marriage did not introduce further reduction to criminality. Our findings demonstrate that selection effects partly explain the association between relationship status and criminality but are also compatible with a causal effect of cohabitation on reduced risk of being suspected of a crime.

Keywords Marriage effect · Cohabitation · Relationship · Criminal behavior · Suspected crime · Within-individual analysis

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Intro

For the past three decades, criminologists have argued that marriage leads to a reduction in crime (Sampson & Laub, 1993; Sampson et al., 2006; Skardhamar et al., 2015). The assumption has been that marriage is a turning point that affects an individual's routine activities and introduces more informal social control into their life, thus making it less likely that they will commit offenses (Sampson & Laub, 1993). Criminologists have dubbed this the marriage effect.

In addition to methodological issues arising from the difficulty in finding a strong quasi-experimental design to study the causal effect of marriage (Skardhamar et al., 2015), the idea of marriage as a turning point for criminal behavior has faced increased criticism, as marriage today can no longer be viewed as the beginning of a serious relationship. The influential study by Sampson & Laub, (1993), which was the first study to highlight the marriage effect, utilized data from the 1950s when marriage as an institution had more central cultural and societal status than it does today: e.g., in terms of social norms or stigma associated with non-marriage. Today, marriage is more often than not preceded by a long period of dating and cohabitation (Manting, 1996; Smock, 2000). In Finland, this change can be seen, for example, in the proportion of children born out of wedlock that has risen from 5.8% in 1970 to 46.1% in 2020 (Statistics Finland, 2021). As such, the process of desistance likely starts long before marriage (Lyngstad & Skardhamar, 2013), and marriage can be seen as more of an outcome of desistance than a turning point affecting it (Skardhamar et al., 2015). Accordingly, criminologists have called for studies focusing on the effects that cohabiting might have on criminal behavior. This is especially important as the first experiences of cohabiting and the most active criminal periods in an individual's life tend to coincide (Bersani et al., 2009; Sampson et al., 2006).

The few studies focusing on the association between cohabitation and criminal behavior have yielded rather mixed results. A study on Finnish ex-prisoners observed a greater reduction in recidivism for those who transitioned to cohabitation as compared to those who got married (Savolainen, 2009). In contrast, in a study using data from the National Longitudinal Survey of Youth, Forrest, (2014) found that cohabitation had no impact on crime involvement, although the rate of offending went down. Also, a recent US-based study concluded that a stable cohabitating relationship does reduce criminal behavior, but not as much as marriage (Gottlieb & Sugie, 2019). Indeed, Gottlieb & Sugie, (2019) suggested that the observed association between criminal activity and cohabitation or marriage is not due to the relationship status itself, but rather the stability of the relationship. Relationships lasting longer than a year were associated with reduced involvement in crime, especially in women. Similar results have been noted before by Siennick et al., (2014) using data from the US-based Monitoring the Future survey, although they did not observe differences between sexes.

Self-selection into marriage or to cohabitation is a particular concern whenever the effects of a relationship are being studied. It can be difficult to identify whether a reduction in criminal behavior when married is due to marriage itself

or to other factors that may have led a person to getting married in the first place (Nguyen & Loughran, 2018). Researchers have used statistical techniques such as propensity score matching (e.g., Sampson et al., 2006) and within-individual analysis (e.g., Forrest, 2014) to deal with self-selection bias. These studies have suggested that selection effects in unions are strong and may explain much of the observed associations.

Besides self-selection into relationships, the outcomes of relationships may also be influenced by whom people choose to form a relationship with. Previous literature has, for example, noted similarities between partners' antisocial behavior (Zwirs et al., 2012), and the partner's criminal behavior has been shown to increase one's own risk of criminal behavior (Herrera et al., 2011). Antisocial behavior of the partner has also been found to be a risk factor for domestic violence (Herrera et al., 2008). However, as marriage is also expected to introduce more social control into an individual's life (Sampson & Laub, 2005), their criminal behavior might also decline. A recent study observed a larger relative decline in offending among those who married a spouse with a criminal history compared to those who married a non-criminal spouse (Skardhamar et al., 2014). As an explanation for the result, the authors suggest that a shared commitment to desistance between spouses might speed the desistance process leading to a greater decline in offending. Yet, another study from Denmark concluded that convicted men who married convicted women were much more likely to recidivate than those who married non-convicted women (Andersen et al., 2015). Therefore, it is important to examine how partner choice affects crime.

Overall, a more comprehensive picture of exactly how different relationship types are associated with criminal behavior is needed. Prior evidence is patchy, based on older cohorts, and has not assessed the effects of partnership types simultaneously with both union duration and whether the partner's criminal behavior moderates the associations. Furthermore, little evidence is available to assess whether these associations vary between different kinds of criminal behavior. The aim of the current study is to fill these research gaps. We used an extensive longitudinal register-based dataset to examine how cohabitation and marriage, and the length of those relationships, are associated with suspected crime among young men and women in Finland. We measured suspected crime as being suspected of violent crime, drug-related crime, or any crimes. We used between- and within-individual analysis to adjust for observed and unobserved individual-level covariates, taking into account the duration of relationships for both cohabitation and marriage. We also examined whether the partner's suspected criminal background moderated the associations.

Methods

The dataset for this study was derived from register-based data of Statistics Finland including all 0–14-year-old children living in Finland at the end of the year 2000 ($n = 936{,}333$). The participants have since been followed up annually through the registers, with the latest data being from the year 2019. We could use the follow-up data up to the year 2017 as the latest data on suspected crimes was from the year

2017. The register data includes individual-level information on the participants' age, sex, education, labor market status, and other demographic variables. Statistics Finland linked the data with police records for being suspected of crimes. As we were interested in how cohabitation and marriage affect suspected crime, we limited our analytic sample to all the observations from each participant beginning from the year they moved away from their childhood home. We excluded those who had not moved away from their parental home during the follow-up ($N = 147,674$), as well as the cohorts of 2018 and 2019, for whom we did not have data on criminal records ($N = 102,576$). Participants may have moved abroad or died during the follow-up. In these cases, we included all the available observations for those participants in our analyses. Within this framework, the age range of our participants was 15 to 31 years of age, and the sample size was 683,118 with 4,442,313 annual person observations.

Measurement of Relationship Status

The registry data included information on each participant's family status at the end of the year. Family status was measured on a 7-point nominal scale: 1, head of a family; 2, partner; 3, a child; 4, head of the cohabiting family; 5, cohabiting partner; 6, not belonging to a family; 7, unknown. A participant was considered a child if they were living with their parents, irrespective of their age. Cohabiting status in the registry data is defined as two spouseless adults of different sex aged 18 and over living in the same address, provided their age difference is less than 16 years and they are not siblings (Statistics Finland, 2022). For each participant, we only included the observations beginning from the year their family status changed for the first time from "child" to something else (but not to "unknown"). We used these variables to derive the relationship status of each participant for each year. Participants were coded as (1) being single when their family status was "not belonging to a family," (2) cohabiting, or (3) married. Marriages also included same-sex unions. Same-sex marriages became legal in Finland in 2017.

Measurement of Relationship Length

We calculated the length of each relationship status based on changes in the status, with a resolution of 1 year as this was also the temporal resolution of our measure of suspected crime. Although our data allowed for a relationship status to last up to 18 years, roughly 95% of relationship status lengths fell within 1 to 8 years. Thus, we truncated the relationship length at 8 years.

Measurement of Suspected Crimes

In this study, the outcome is measured as having been suspected of a crime during a given year. To examine whether there was variation in the associations of relationships with different kinds of crimes, we used three binary measures for our outcome of interest: (1) being suspected of violent crimes, (2) being suspected of drug-related crimes, and (3) being suspected of any crime. Violent crimes were selected as the

most severe type of offenses and included crimes such as petty assault, assault, and causing bodily harm. Drug-related crimes were crimes such as unlawful use of narcotics, narcotics offenses, and aggravated narcotics offenses. We included drug-related crimes as a separate category because of their potentially stronger association with relationship status (Salvatore et al., 2020). We excluded traffic infractions from any crime outcome in our analyses as they are relatively minor offenses and because their rates have changed considerably over time due to the adoption of automatic traffic surveillance. These same data were also available for the partners of those who were cohabiting or married.

Covariates

We adjusted our analysis with age, age squared, educational attainment, and labor market status as these factors are likely to confound the association between relationship status and suspected crime. Educational attainment was measured as the highest degree attained during the follow-up and categorized into five groups (the corresponding ISCED-2011 codes in parentheses): (I) lower secondary school (2), (II) trade school or equivalent (3), (III) high school (3), (IV) bachelor's degree or equivalent (5/6), and (V) master's or doctoral degree (7/8). Labor market status was categorized into four groups as follows: (I) employed, (II) unemployed, (III) student, and (IV) other, and it was included as a time-varying covariate alongside age and age squared.

Statistical Analysis

As we had annually repeated measurements for each participant, we used a multilevel logistic regression model to examine the associations between relationship status and suspected crime. We used random-effects logistic regression models to examine how differences in relationship status between individuals were associated with suspected crime. To gauge whether relationship length affected the potential associations between relationship status and suspected crime differently depending on the relationship status, we included an interaction term between relationship status and relationship length in the analysis. From the estimated associations, we computed average predicted probabilities for the risk of being suspected of a crime for each relationship status at different relationship lengths. To estimate how different relationship statuses within individuals were associated with suspected crime, we used fixed-effects logistic regression models that allowed us to also control for all observed and unobserved time-invariant confounders. We used odds ratios to quantify the combined associations between relationship status, relationship length, and their interaction and suspected crime. The reference status in all analyses is the first year of being single, to which all other results are compared to. We examined all the associations separately for men and women.

We also conducted additional analyses to examine if the criminal background of a partner moderated the relationship between relationship status and being suspected of a crime. First, we examined whether the partner being suspected of a crime during

a year was associated with one's own risk of being suspected of a crime adjusting for relationship status and length, age, age squared, educational attainment, and labor market status. Then, we examined whether a partner's criminal background from before forming a relationship was associated with one's own risk of being suspected of a crime. We defined the criminal background of a partner as having been suspected of any crime in the previous 2 years before the beginning of a relationship, as has been used previously (Skardhamar et al., 2014). We then ran the same models as in the main analyses stratifying by the criminal background of the partner. Thus, a single participant could be part of both strata if at different times they were involved in relationships with a partner with no criminal background and a partner with a criminal background.

Participants who moved away from their family homes early might have a higher crime risk. To avoid the bias, this could have been introduced into our sample, we ran different sensitivity analyses. First, we repeated our main analyses using a sample in which we included all participants aged 15 years or older, including those who lived with their parents. In these analyses, we had an extra relationship status—living with parents. Second, to focus more closely on cohabiting relationships and marriages, we restricted our sample to those who were 20 years or older. At this age, more than half of our original sample had moved away from their family homes. Third, we also ran sensitivity analyses stratified by the length of cohabiting relationships. These analyses aid in interpreting how the transition to marriage affects the risk of being suspected of a crime.

For further sensitivity analysis, we ran our within-individual main analysis again, but also controlled for participants' income and whether they had had children. Income was measured as disposable income and divided into annual deciles within the participants. Having children was entered into the models as a dichotomic variable and coded as one starting from the year the participant had had a child. Finally, we ran our main analyses stratified by age group in order to examine if selection to a relationship at a certain age would lead to a larger reduction in crime risk. Age groups were set as 20–24 years old and 25 years and older so that there would be variation in both relationship status and the outcomes.

Results

Descriptive statistics are shown in Table 1. Compared to men, women were more highly educated and were less often suspected of crimes. Relationship statuses by age are shown in Supplementary Table A. Women were more often cohabiting or married than were men, and at a younger age. Age-crime and age-relationship curves for all participants, including those who lived with their parents, are shown in Fig. 1. The most criminally active age peaks at 19 years. It coincides with the time most participants are moving away from their parents.

The average predicted probabilities of being suspected of a crime by relationship status and length for different crime types originating from the between-individual analysis are shown in Fig. 2. For men, the predicted probability of drug-related and any crimes was higher for those who were single compared to those who were

Table 1 Descriptive statistics. Frequency (percentage), unless otherwise stated

	Men ($n = 330{,}110$)	Women ($n = 353{,}008$)
Mean age (SD)[a]	23.73 (3.19)	23.15 (3.31)
Education[a]		
Lower secondary school	40,483 (12)	31,946 (9)
Trade school	145,100 (44)	114,430 (32)
High school	69,082 (21)	86,366 (24)
Bachelor's degree	53,018 (16)	86,551 (25)
Master's degree	22,427 (7)	33,715 (10)
Labor market status[a]		
Employed	226,023 (68)	24,2146 (69)
Unemployed	32,088 (10)	25,648 (7)
Student	52,388 (16)	59,158 (17)
Other	19,611 (6)	26,056 (7)
Have ever been suspected of…		
…violent crime	20,875 (6)	8241 (2)
…drug crime	17,257 (5)	5190 (1)
…any crime	66,201 (20)	26,308 (7)
Relationship status[a]		
Single	167,934 (51)	149,318 (42)
Cohabiting	122,935 (37)	146,366 (41)
Married	39,241 (12)	57,324 (16)
Have children (%)	54,100 (16)	86,894 (25)
Immigrant (%)	5615 (2)	5795 (2)
Mean relationship status length in years (SD)		
Single	3.57 (2.33)	3.29 (2.24)
Cohabiting	3.19 (1.89)	3.29 (1.97)
Married	3.77 (2.26)	4.01 (2.34)

[a]Status in last observation per participant

cohabiting—roughly 1.5–2.0% for drug-related and 6.5–7.0% for any crimes. The probability of criminality was significantly lower for those who were cohabiting and it decreased over the first years spent cohabiting, settling at around 0.5% and 4.0% for drug-related crimes and any crime, respectively. The corresponding relative reductions in risks were ~ 40–55% for drug crimes and ~ 20–27% for any crimes. Married men had a roughly similar risk for drug crimes and any crimes as had those who were cohabiting. With regard to violent crimes, the risk remained stable throughout the years of men being single (1.5%) and was only decreased for those who had been cohabiting for more than 2 years (0.9–1.2%), with ~ 20–40% reduced relative risks. Married men had again a similar risk for violent crime as had men who were cohabiting for more than two years.

For women, the absolute risks of violent and drug crimes were less than 0.5% even for those who were single. Those who were cohabiting or married had an

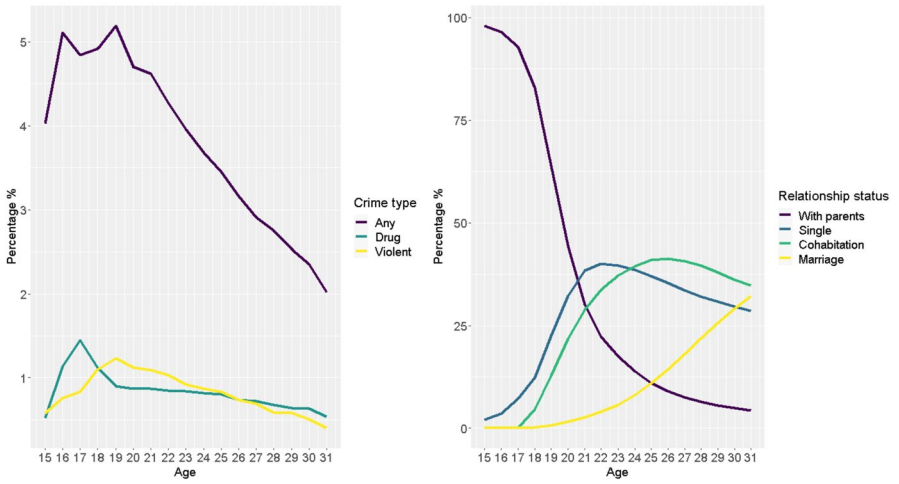

Fig. 1 Age-crime and age-relationship curves

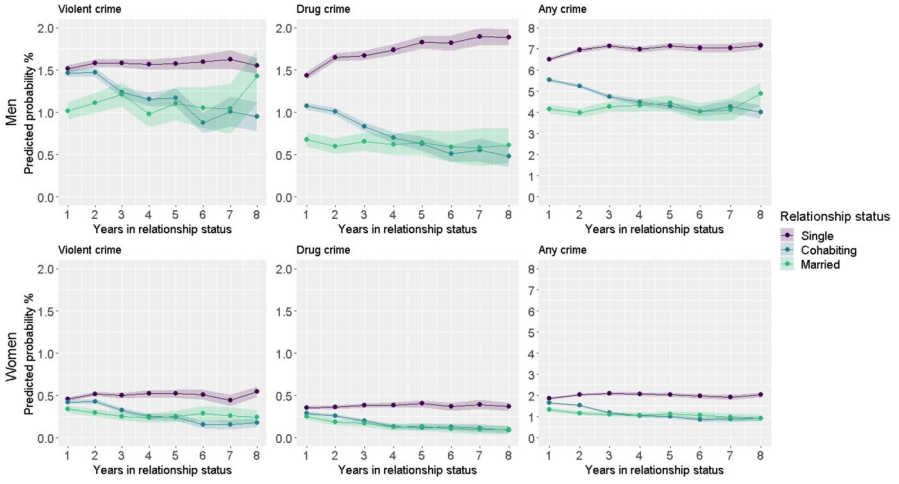

Fig. 2 Average predicted probabilities from the random-effect models for the risk of criminal behavior by relationship status and relationship length and adjusted for age, age-squared, education and labor market status. Please note the different y-axis scales between the crime types for better interpretability

even lower risk, with the risk decreasing for those who had been in a relationship longer (relative risk reduction ~ 50–70%). The risk for any crime was significantly lower for cohabiting and married women compared to those who were single. There were no clear differences in the risk between those who had been cohabiting or married for longer than two years. All predicted probabilities and their confidence intervals are detailed in Supplementary Table B.

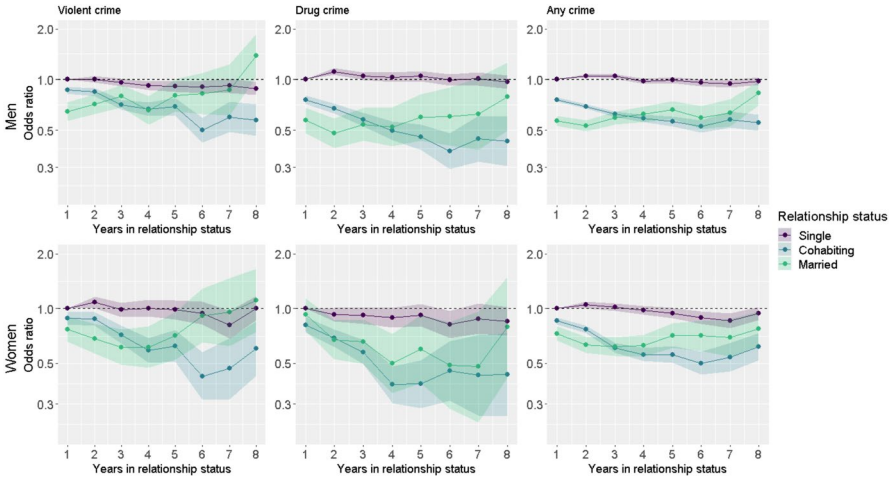

Fig. 3 Odds ratios from the fixed-effect models for the associations between relationship status and length, and risk for criminal behavior adjusted for age, age-squared, and labor market status

The within-individual odds ratios for being suspected of a crime from the fixed-effect analyses for both men and women account for time-invariant individual unobserved characteristics (Fig. 3). For both men and women, the risk for all types of crime was slightly lower when they had been single for multiple years compared to the first year of being single (odds ratios range being ~ 0.95–0.98 for men and ~ 0.86–0.95 for women). The risks were clearly reduced when people were in a cohabitating relationship compared to being single, and the reduction was more pronounced for the first 5 or 6 years of cohabiting (*ORs* range: 0.53–0.56 for men and 0.50–0.56 for women). For married men and women, the risks for all measured crime types were generally comparable to those cohabiting for the first years of marriage but tended to increase slightly with the duration of the marriage. See Supplementary Table C for all odds ratios and their confidence intervals.

Men whose partners had been suspected of any crimes during their cohabitation/marriage were much more likely to be suspected of any crimes themselves (*OR* = 11.2, 95% *CI* 10.5 to 11.9). The between-individual-predicted risks and within-individual odds ratios for being suspected of a crime stratified by partner's criminal background for men are shown in Fig. 4. Regardless of the type of crime, men who were cohabiting with or were married to partners who had a history of being suspected of a crime had a much higher risk of being suspected of crimes themselves compared to those men who were in a relationship with a non-criminal partner. However, among men with criminal partners, the risk of being suspected of a crime declined substantially with the increasing length of the relationship as we observed a 35–55% reduction in the risk of being suspected of any crime compared to the first year of cohabiting. Marriage was not associated with any further reduction in risk for either group. See Supplementary Table D and E for all predicted risks, odds ratios, and their confidence intervals from between- and within-individual analyses, respectively.

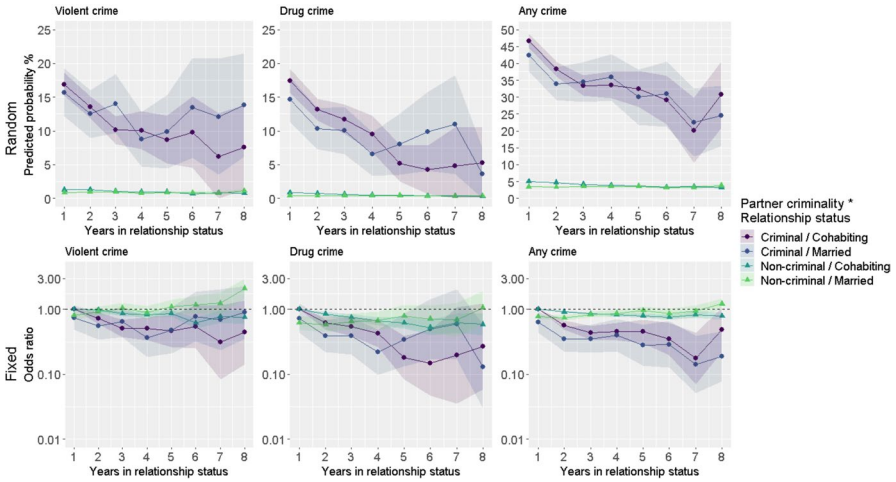

Fig. 4 Between individual average predicted probabilities and within-individual odds ratios for men for the associations between relationship status and criminal behavior stratified by the criminal behavior background of the partner. Odds ratio reference level is 1 year in a cohabiting relationship. All estimates adjusted for age, age-squared, educational attainment, and labor market status. Please note the different y-axes scales between the crime types for better interpretability

Similarly, women whose partners had been suspected of any crimes during their relationship were much more likely to be suspected of any crimes themselves ($OR = 11.6$, 95% CI 11.1 to 12.1). The between-individual-predicted risks and within-individual odds ratios for being suspected of a crime stratified by

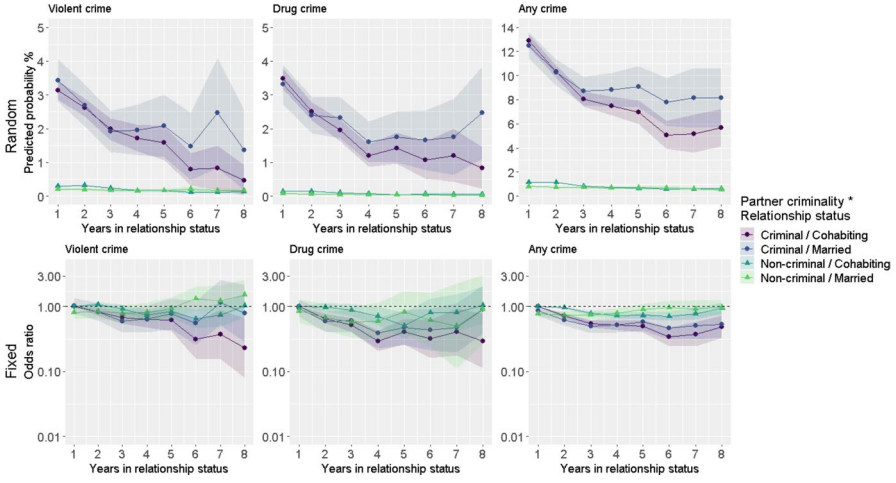

Fig. 5 Between individual average predicted probabilities and within-individual odds ratios for women for the associations between relationship status and criminal behavior stratified by the criminal behavior background of the partner. Odds ratio reference level is 1 year in a cohabiting relationship. All estimates adjusted for age, age-squared, educational attainment, and labor market status. Please note the different y-axes scales between the crime types for better interpretability

partner's criminal background for women are shown in Fig. 5. The patterns of risks for being suspected of crimes were similar to those observed in men, although the absolute risks were expectedly lower overall. Likewise, the within-individual estimates showed a 45–65% reduction in risk of being suspected of any crime for women who formed relationships with a partner with a criminal history as compared to the first year of cohabiting. For those who formed a relationship with a non-criminal partner, the reductions were barely significant. Again, for both groups, marriage was not associated with a further reduction in risk compared to being in a cohabiting relationship. See Supplementary Table F and G for all odds ratios and their confidence intervals from between- and within-individual analyses, respectively.

In the sensitivity analyses, we included all observations from the participants, including the times they lived with their parents. In the between-individual analyses, those who were single had the highest risk for crime as was expected (Supplementary Fig. A). The within-individual results for drug crimes show that the odds for such crime peak after 3 years of living at home which coincides with the peak of drug crimes at age 17, when the vast majority still live with parents (see Supplementary Fig. B). In general, the inference compared to our main analyses remains unchanged. In the second sensitivity analyses, we repeated our main analyses but restricted the age to those who were 20 years old or older. Again, the inference of our main analyses remains most likely due to the fact that there were rather few participants who moved away from their parents at an earlier age and were involved in criminal behavior. As such, the results did not differ that much (see Supplementary Fig. C and D). We also ran analyses stratified by the length of a cohabiting relationship. These results show that the transition from a cohabiting relationship of 1 to 2 years to marriage is associated with a reduction in crime risk. Getting married after a longer cohabiting relationship does not provide a further reduction in crime risk (see Supplementary Fig. E and F). Taken together, the results suggest that a long stable relationship is associated with reduced crime risk irrespective of being married or not.

Controlling for income and having children did not change our findings from the main analysis. (Supplementary Fig. J). In the age-group stratified analyses, the reference group is the first year of being single within the age range. Participants might have been in a long relationship that had started before that age range but ended within the range. Therefore, the results also include relationships that have lasted longer than 5 years. For men, the results for any drug crime are mostly in line with our main analyses, although the reduction in the risk for suspected crime is smaller for the older age group (Supplementary Fig. K). For violent crime, the point estimates for the risk of suspected crime are larger for those in long marriages, although the difference to the time the participants were single was not statistically significant. For women, the differences in odds ratios between relationship statuses diminished compared to the main analyses, especially in the older age group (Supplementary Fig. L).

Discussion

In the current study, we used Finnish longitudinal register data with between- and within-individual analyses to examine whether relationship status—both cohabitation and marriage—and the length of the relationship were associated with the risk of being suspected of a crime. We found that people who were in a relationship, whether cohabiting or married, had a significantly lower risk of being suspected of a crime than people who were single. This applied to within-individual associations as well, which means that the same individuals had a lower risk of being suspected of a crime during the time periods they were cohabiting or married compared to the times they were single, suggesting that these associations are not solely driven by selection effects due to stable individual-level traits. Finally, our results also show that being in a relationship with a partner who has a criminal background is associated with a markedly higher risk of being suspected of a crime compared to those who are in a relationship with a partner without any criminal background.

Our findings show that men who were single had roughly a 7% risk of being suspected of any crime whereas the risk for those who were cohabiting or married was around 4% depending on how long they had been in a relationship. The risk of being suspected of violent or drug crimes for singles was lower at around 2%, and for cohabiting and married men even lower at roughly 0.5%, again depending on how long they had been in a relationship. The risks for women were expectedly roughly one-fourth to one-third of those for men, but similar patterns of relationship types and relative risks of crime were observed among men. The results from our within-individual analysis imply that the risk for all the types of crimes we examined is slightly lower at times when people had been single for long compared to the first year of being single. However, the risk is about half at 5–6 years of cohabiting compared to the first year of being single. Marriage does not seem to be associated with any additional protection to the risk observed among those cohabiting.

Our results and their interpretations remained unchanged even after further controlling for income and having children, or after including participants who lived with their parents in the analyses. Likewise, in the age group, stratified analyses did not change the overall interpretation of the results for men, although the odds of being suspected of crimes were smaller. For women, the odds ratios between relationship statuses diminish compared to the main analyses, implying that women are most likely suspected of crimes during their teenage years and that at an older age, there is no difference in the risk of being suspected of crimes even as their relationship status varies.

Much of the previous literature has not explicitly assessed the predicted risks for criminal behavior disaggregated by both relationship type, length, and criminality of the partner. Marriage has been shown to greatly reduce the risk for crime in US studies (King et al., 2007; Sampson et al., 2006), as well as in European ones (Bersani et al., 2009). Sampson et al., (2006) also provided preliminary evidence for the similar association between cohabition and crime in older cohorts

born in 1924–1932, for whom cohabitation was rare. In the Nordic context, the propensity for offending has been shown to reduce during the years preceding marriage but may increase slightly as the marriage lasts longer (Skardhamar et al., 2015). Somewhat similar conclusions can be drawn from both our random- and fixed-effect models. The first 4 to 6 years of cohabiting were associated with a reduced risk of being suspected of a crime, but the same was not evident for marriages. This observation is, however, in direct contrast to the results of a study based on the National Longitudinal Survey of Youth 1997 that found marriage to be associated with a larger reduction in offending than cohabitation (Forrest, 2014). It is difficult to determine whether such a contrast depicts an actual difference in the effects of marriage on criminal behavior between young adults in Finland and the USA. It is evident that the people who had been married for up to 8 years within the follow-up of our sample are a very select group. The oldest participants at the end of our follow-up were 31 years old and the mean age of getting married in Finland has been over 30 years for at least the past decade (Statistics Finland, 2019). Thus, the estimates for longer marriages may be biased and drawing strong conclusions from those findings should be carried out with caution, including extrapolation to older individuals and long-lasting marriages.

Partner selection could have a significant impact on whether the relationship increases or decreases the risk of crime. Therefore, we examined whether a partner being suspected of crimes moderated the association between relationships and the risk of being suspected of a crime. A previous Dutch study has found partner's antisocial behavior to be consistently positively correlated across different kinds of antisocial behavior measures of the index persons (Zwirs et al., 2012). Such similarities have been attributed to assortative mating—that is, people tend to form relationships with partners who share their traits and behaviors, including criminal behavior (Boutwell et al., 2012; Frisell et al., 2012). Consistent with this, our results demonstrate that a partner being suspected of crimes during the relationship was associated with an approximately 11-fold greater risk for one's own risk of being suspected of crimes. Also, men who were in the first year of cohabitation or marriage with a partner who had a background of being suspected of crime had a much greater risk of being suspected of a crime, roughly ten times the risk (45% vs 5%), compared to men who were in a relationship with someone without a criminal background. Those who had been in a relationship for longer had a much lower risk, but the ratio of the risk between the two groups remained roughly the same. Results for the risk of being suspected of drug-related and violent crimes were similar, albeit at lower absolute risk levels. Taken together, these findings are in line with another European study that showed convicted men who married convicted women to have a significantly higher risk for recidivism than men who married non-convicted women (Andersen et al., 2015). The results from the fixed-effect analyses also suggested that the risk of being suspected of any type of crime was about half for those who were in a relationship with a partner who had a criminal background during the first few years of a relationship and even lower if the relationship lasted longer.

As with all studies examining the associations between cohabiting or marriage and crime, there are limitations to be considered. First, the selection bias mentioned earlier is something that cannot be comprehensively dealt with in our study or any of

the other observational studies on this subject. Even though our study design and the use of fixed effects take into account all unobserved time-invariant variables affecting relationship status and criminal behavior, there is still potentially unobserved heterogeneity between those who form a cohabiting relationship or get married and those who do not. Such unobserved heterogeneity may also occur within individuals during periods when in a relationship vs. not and may thus in part explain our findings. Moreover, those who contribute to within-individual estimates also require some variation in being suspected of crime over time and may thus reduce the generalizability of our results. A recent Danish study (Andersen et al. 2021) used a policy reform as a natural experiment to examine how arranged marriages affected criminal convictions of young men belonging to an ethnic minority—an attempt to tap into the unobserved heterogeneity. While they showed that marriage had no effect on convictions, the generalizability of the findings to the general population remains limited. A second limitation is the relatively young age range of our sample which introduces limitations to the number of individuals who were cohabiting or married during follow-up. In Finland, the age limit for getting married is 18 years. For cohabiting, there is no set limit, but Statistical Finland uses a limit of 18 years when inferring cohabitation for registered data. Furthermore, they only consider couples of opposite sexes as being in a cohabiting relationship, leaving out possible same-sex couples. Given that during the last year of follow-up the age range of our sample was from 19 to 33, about 31% of the individuals still had not been in a cohabiting relationship or married during the follow-up. Thus, the effective sample size when examining the effect of cohabitation and marriage on the risk of being suspected of crime in within-individual models was much smaller than the sample size in between-individual analyses, especially for the marital relationships that had lasted longer. This can be seen in the uncertainty of our results in the form of large confidence intervals. Therefore, care should be taken when generalizing those results. Further research is needed on older samples to validly study longer marital unions. Our data was also limited by the temporal resolution of the police records for being suspected of crimes. Those data were at an annual level, which meant that some criminal behavior might not have coincided with changes in relationship status. Thus, it is possible that our results reflect, at least in part, the effects of a change in relationship status (that is, a separation or forming a new relationship) rather than the effects of being in a relationship. Likewise, using police records for being suspected of crimes might have also introduced some bias to our findings, as police may direct their efforts to known offenders and possibly their spouses.

Conclusions

In the current study, we used Finnish longitudinal register data to examine how cohabiting and marriage were associated with the risk of being suspected of a crime and whether that association was moderated by the partner's suspected criminal behavior. Our results suggest that those who are cohabiting or married have a significantly lower risk of being suspected of crime compared to those who are single. These associations are moderated by the partner's suspected criminal background:

people in a relationship with a partner who has a had been suspected of crime have over ten times higher risk of being suspected of crime compared to people whose partner does not have such a background. Taken together, our findings highlight selection effects contributing to the population-level association between relationship status and the risk of being suspected of a crime but also support the potential causal effect of cohabitation on reducing the risk. Marriage does not seem to be especially beneficial over and above cohabitation, suggesting that future research on the effects of intimate relationships should pay particular attention to measuring periods of cohabitation.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s40865-022-00219-6.

Funding Open Access funding provided by University of Helsinki including Helsinki University Central Hospital. J. Airaksinen and A. Latvala were supported by the Academy of Finland (308698). M. Aaltonen was supported by the Academy of Finland (316595). L. Tarkiainen is employed in URBARIA in a post-doctoral research position funded by the municipalities of the Helsinki capital region. P. Martikainen is funded by the Academy of Finland.

Declarations

Conflict of Interest The authors declare no competing interests.

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