

**The Effect of Arrest on Intimate Partner Violence Recidivism**

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**Abstract**

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**Introduction:** Intimate partner violence (IPV) is experienced by over a third of U.S. women at some point in their lifetimes. As a result of the abuse, survivors of IPV experience a range of poor health outcomes, with long-term and severe abuse more likely to cause multiple comorbidities. **Objective:** Our study aim was to measure the effect of arrest on reducing IPV recidivism as a secondary prevention strategy. **Methods:** We used data from a population-based cohort of 5,466 male-female couples in Seattle, WA from 1999-2001 with probable cause of a police-reported, male-perpetrated incident of IPV against their female partners. We estimated the risk of IPV recidivism for the entire 12 month follow-up and for three separate follow-up periods: the first 3 months following the index event, and the periods 4 to 6 months and 7 to 12 months following the index event for physical and psychological IPV separately. Multiple Cox regression analyses were conducted for time-to-first recurrent IPV event and adjusted for index IPV abuse type, cohabitation, weapon use, survivor injury at the index incident and race of both

survivor and perpetrator. **Results:** Arrest was associated with a 29% reduction in physical IPV recurrence in the 12 months following the index incident [adjusted Hazard Ratio (aHR)=0.71, 95% CI: 0.54-0.93]. The other time periods analyzed for physical IPV found point risk estimates consistent with lower rates of IPV associated with arrest, however, they did not achieve statistical significance. Arrest was not associated with risk of psychological IPV events in the 12 months following the index incident [aHR=1.06, 95% CI: 0.85-1.32]. **Conclusions:** Our study found arrest significantly decreases risk of physical IPV recidivism in the 12 months following arrest.

## **INTRODUCTION**

Intimate partner violence (IPV) is the use of violence, fear and/or coercion to gain power and control over one's partner.<sup>1</sup> IPV can take the form of physical, psychological, and/or sexual abuse as well as financial abuse and reproductive control.<sup>2-6</sup> Although both males and females perpetrate violence against intimate partners of either sex, the most common form of IPV occurs in heterosexual relationships with a male perpetrator.<sup>7</sup> Among women in the United States, 35.6% experience some form of IPV in their lifetime and more than 500,000 IPV incidents are reported to the police annually.<sup>4,7</sup>

Survivors of IPV are at increased risk of poor health outcomes, including post-traumatic stress disorder, depression and substance abuse, likely due to the abuse they experience.<sup>5,8-10</sup> Survivors of long-term and severe abuse are more likely to experience multiple comorbidities compared to survivors of less frequent or less severe abuse.<sup>5</sup> In 2010, the Centers for Disease Control found that among women reporting any lifetime IPV, 72.3% reported experiencing more than one type of abuse and multiple episodes of abusive events within each abusive relationship.<sup>6</sup> As each abusive incident increases the cumulative likelihood of injury, employing successful prevention strategies that reduce IPV recidivism would likely decrease survivor injury and potentially limit subsequent poor health outcomes. There is extensive literature examining opportunities for IPV screening and primary prevention, albeit with limited success.<sup>11,12</sup> However, there are few known effective secondary prevention strategies for individuals currently experiencing IPV, a group at high risk of future IPV.

Many existing secondary prevention strategies for IPV have barriers to implementation or are of uncertain efficacy.<sup>13-15</sup> Domestic violence protection order

issuance is one strategy that has been found to be effective in preventing future physical and psychological IPV, perhaps due in part to the use of a criminal justice system enforcement mechanism for the orders.<sup>16</sup> The success of protective orders indicates the potential for other criminal justice system responses, such as suspect arrest, to provide effective secondary prevention.

When police respond to an IPV incident, arrest is the first step in a series of potential criminal justice system responses that can include criminal charges and sentencing. A landmark, randomized trial in Minneapolis was designed to examine the effect of arrest on IPV recidivism in the 6 months following an initial incident of police-reported IPV. Cases were randomized to one of three conditions: arrest, police counseling or ordered 8 hour separation between the suspect and survivor.<sup>17</sup> That study, completed in 1982, found a deterrent effect of arrest on IPV recidivism, and its publication prompted the mandatory arrest laws in use today. However, there were some concerns with selective enrollment of less severe forms of abuse in the initial study. Replication studies have either found no association between arrest and decreased risk of IPV or have been unable to replicate the magnitude of effect seen in the initial study.<sup>18-23</sup> The aim of this study was to evaluate the utility of arrest as a secondary IPV prevention strategy, focusing on recurrent IPV in the first 3 months following the index event, and the periods 4 to 6 months, 7 to 12 months and the entire 12 months following the police reported IPV.

## **METHODS**

### **Study Sample**

We used existing data from a cohort study of male perpetrators with female partners identified through the Seattle Police Department Domestic Violence Unit database. The

original cohort study aimed to assess the impact of criminal justice system responses on IPV recidivism and health outcomes. Eligible incidents were those in which: (1) the Seattle Police responded to a call within the Seattle city limits during the study period of January 1, 1999 through December 31, 2001; (2) the call resulted in a police incident report indicating IPV in a current or former heterosexual partnership with the male partner identified as the perpetrator of abuse; and (3) only the male was identified as the perpetrator of abuse.

A total of 6,266 male/female partners met the initial inclusion criteria. We further restricted our study population to include only those with arrestable offenses at the index incident by excluding the 800 couples with only index offenses of as “disturbance,” “suspicious circumstances,” “outstanding warrants” or “other offense” on the police report. Remaining arrestable offenses as defined by the Washington State laws included: assault, burglary, criminal trespass, custodial interference, harassment, menacing, property damage, reckless endangerment, stalking, theft, threats and violation of court orders.<sup>24</sup> The final sample consisted of 5,466 former or current intimate partner couples.

Index IPV incidents were defined as the earliest chronological IPV incident between the male perpetrator and female survivor during the study period. Perpetrator and survivor names and dates of birth were used to identify Seattle Police Department Domestic Violence Unit records for subsequent IPV incidents for the couple during the 12-month study follow-up period as well as any IPV incidents in the year prior to the index incident.

## **Measures**

We defined recurrent IPV, the outcome of interest, as a police-reported IPV incident between the index couple, and classified the event as physical or psychological IPV based on the primary and secondary offense codes for the incident. IPV incidents were classified as physically abusive (with or without psychologically abusive behavior) or psychologically abusive behavior only. Index incidents that included sexual abuse were referred to the Seattle Police Department Sexual Assault Unit rather than the Domestic Violence Unit and were unavailable for study. Arrest of the suspect for the index incident served as the exposure of interest, and was obtained from police reports, Washington State arrest records and court records. All demographic information and index event characteristics were obtained from the police report.

### **Statistical analysis**

Multivariable Cox regression analyses with time-varying arrest variable were used to quantify the risk of the first police reported IPV incident following the index incident. Arrest was coded as a time-dependent variable; for example, a perpetrator arrested 10 days post index was classified as not arrested for the first 9 days of analysis. Analyses were conducted for the entire 12 month follow-up and for three separate follow-up periods: the first 3 months following the index event, and the periods 4 to 6 months and 7 to 12 months following the index event to assess for the potential of differential effect of arrest over time. Psychological and physical abuse were analyzed as separate outcomes. When analyzing risk of physical IPV recidivism, we ignored all reported psychological IPV incidents. Couples were at risk for recurrence until the end of the analysis period or until there was a physical IPV incident reported to the police. Corresponding exclusions applied to couples whose first abuse event was psychological. A couple whose first IPV

incident occurred in months 0-3 was excluded from subsequent analysis periods, likewise, couples who experienced their first IPV incident in months 4-6 were excluded from the 7-12 month analysis. We tested, but did not find, effect modification by whether or not the perpetrator was contacted by the police at the index incident; as such, the combined results are presented.

All analyses were adjusted for confounders determined *a priori* based on associations established in existing literature: index IPV abuse type,<sup>25-28</sup> cohabitation,<sup>29,30</sup> weapon use,<sup>31-33</sup> police reported survivor injury at the index incident<sup>8,34</sup> as well as police recorded perpetrator and survivor race.<sup>35-37</sup> Analyses were restricted to couples not missing confounders (n=4,359). The initial cohort study received IRB approval from both the University of Washington (HAS #19057) and Washington State (Project B-100401-H). Because identifiable data were destroyed prior to conducting the analyses presented in the current paper, this study was granted an IRB exemption from the University of Washington IRB Review Board. Stata 14 was used for all analyses.<sup>38</sup>

## **RESULTS**

### **Cohort Description**

The majority of perpetrators and survivors in our cohort were either white (39.2% and 46.4%, respectively) or African-American (33.8% and 25.0%, respectively). A greater proportion of both perpetrators and survivors were between 25-34 years of age (34.6% and 35.5% respectively) than in other age groups. Overall, the most common relationship status in our study population at the index incident was “dating/engaged” (62.6%). Over 97% of couples in the study did not have a police reported physical or psychological IPV incident in the year prior to their index incident. Although we restricted our study

population to couples with an arrestable index offense, arrest occurred in only 53.1% of the study population. Among those arrested, 86.4% were arrested within 24 hours of the index incident.

A greater proportion of arrested men were married to their partners than were those not arrested (25.7% and 15.1%, respectively). In incidents in which there was an arrest, it was more common that perpetrator and survivor lived together at the time of the incident than it was in those incidents without arrest (58.7% and 27.0%, respectively). Survivor alcohol or drug use at the time of the incident was more commonly noted by the responding officer in incidents with perpetrator arrest (14.3%) than those with no arrest (5.8%). A greater proportion of arrested perpetrators were noted as using drugs or alcohol at the index incident than non-arrested perpetrators (32.5% and 7.8%, respectively). Survivor injury was also found to be associated with arrest. The most common survivor injury severity among those arrested was classified by the responding officer as a “minor-visible” injury (47.1%) compared to “none” being the most common injury report among not arrested (65.1%). Physical abuse was more common in arrest incidents than non-arrest incidents (80.6% and 49.6%, respectively). Use of an object as a weapon was more common among those arrested than not (7.1% and 4.4%, respectively), and weapon type differed marginally by whether the suspect was arrested. It was more common for the suspect to be present at the scene when police arrived among arrested perpetrators compared to not arrested perpetrators (87.9% and 7.8%, respectively).

### **Results from Multiple Cox Regression Analyses**

For 15.4% of couples, there was at least one police-reported physical or psychological abuse event during the 12 month follow-up period. Of those with at least one police-

reported abuse event, 11.2% of them experienced only physical IPV, 41.9% experienced only psychological IPV and 46.9% experienced both a physical and psychological IPV incidents.

Arrest was associated with a 29% lower rate of physical IPV recurrence in the 12 months following the index incident [adjusted Hazard Ratio (aHR)=0.71, 95% CI: 0.54-0.93]. At 0-3, 4-6 and 7-12 months, hazard ratio risk estimates were consistent with lower rates of IPV following the index incident for physical IPV, although statistical significance was not achieved for these separate time periods [aHR=0.65, 95% CI: 0.42-1.00, aHR=0.91, 95% CI: 0.54-1.52, aHR=0.63, 95% CI: 0.39-1.01, respectively).

Arrest not associated with risk of psychological IPV incidents during the 12 month follow-up [aHR=1.06, 95% CI: 0.85-1.32]. Arrest was also not associated with risk of psychological IPV during the 0-3 months [aHR=1.13, 95% CI: 0.85-1.49] and 7-12 months post index [aHR=1.10, 95% CI: 0.69-1.74]. The hazard ratio point estimate for psychological IPV in the 4-6 months analysis period was consistent with lower rates recidivism but was nonsignificant and may have been due to chance [aHR=0.83, 95% CI: 0.50-1.36].

## **Discussion**

This study demonstrates a lower risk of recurrent physical IPV overall in the 12 months following an index episode of IPV, among couples in which the male suspect was arrested relative to couples in which the male suspect was not arrested, and suggests a pattern of lower rates of physical IPV associated with arrest in each of the 0-3, 4-6 and 7-12 month follow up intervals. We did not find evidence of any difference in the rates of

psychological IPV recidivism associated with arrest.

Our findings support the initial study that prompted the mandatory arrest laws, and provide potential insight into the replication studies that found no association between arrest and decreasing recidivism. The initial Sherman, et al. randomized trial in Minneapolis assessing arrest on IPV recidivism found a 62% reduction in police reported IPV recurrence and a 55% in survivor-reported IPV recurrence among perpetrators arrested compared to perpetrators who received counseling from police officers.<sup>17</sup> However, the investigators noted concerns of police officers differentially enrolling couples based on perceived severity of abuse at the index incident. The spuriously low risk estimate from this study that has not been replicated in subsequent studies may be due to the wide variability of post-arrest criminal justice system responses by city and investigator's inability to assess post-arrest prosecution and incarceration.

Dunford, et al. conducted a replication study following the design used by Sherman et al. in Omaha and found no effect of arrest or ordered separation in comparison to police counseling although their Kaplan-Meier curves were consistent a lower risk of survivor-reported IPV recidivism among arrested perpetrators. The age and racial distribution of couples in the two studies were similar. In the initial Minneapolis experiment, 27% of couples enrolled in couples counseling programs compared to 11% of couples in the Omaha replication study. Investigators also collected additional survivor reported IPV measures in the Omaha study not collected in the initial study. The failure to replicate the initial Minneapolis study may be due to the differences in IPV recurrence measures between studies, difference in proportion of couples engaging in couples counseling programs and difference in sanctions associated with arrest by city.

Although the Dunford, et al. replication study did not substantiate the Sherman study results, subsequent studies did find a deterrent effect of arrest of IPV perpetration. Dunford, et al. conducted a separate randomized controlled trial in Omaha to assess the effect of arrest warrants on IPV recidivism among suspects who were not present when police arrived on scene and found significant decrease in both days-to-next survivor reported injury and days-to-next police-reported IPV.<sup>21,22</sup> In Florida, Pate, et al. conducted a subsequent randomized controlled trial of arrest and found a significant 30% reduction in IPV recidivism associated with arrest among employed but not among unemployed perpetrators.<sup>20</sup> Similar to the Dunford, et al. studies and Sherman, et al. study, severe forms of abuse were excluded for ethical reasons. Berk, et al. conducted a meta-analysis by pooling together Sherman, et al. and Dunford, et al. replication studies and supplementing with preliminary results from a second replication study in Colorado. In line with the Pate, et al. study, they found effect modification by employment status with risk of recidivism following arrest ranging from a significant 20% reduction among those employed to no association among those unemployed.<sup>18</sup> The lack of significance found in the Pate, et al. and Berk, et al. studies among unemployed perpetrators may have been due to insufficient power.

Although our study did not find any association between arrest and risk of psychological IPV, it is possible that our reliance on police-reported data prevented measuring a true association. In the Dunford, et al. study of arrest warrants, investigators found that survivor reports of IPV recidivism decreased more significantly than police reports during follow up periods.<sup>22</sup> When assessing a different justice system response (civil protection orders instead of arrest) on reducing IPV recidivism, Holt, et al. found a

similar relationship between survivor reports and police reports. Comparing those with a permanent civil protection orders (PO) to those without, they found a 10% lower rate of police-reported psychological IPV compared to a 30% lower rate of self-reported psychological IPV in a comparable cohort.<sup>16,39</sup> This indicates the potential for a lower rate of psychological IPV recidivism among couples with criminal justice system responses than what is captured in police records. It is possible that our study may have shown a decrease in risk of psychological IPV recidivism if we had been able to use survivor reported violence.

Since the Sherman, et al. trial, no study has found the same magnitude of effect of arrest on IPV recidivism, however studies have consistently found a deterrent effect of arrest, with some variation the estimated magnitude of effect. Varying risk estimates and evidence of effect modification found in these studies may indicate that the effect of arrest may depend on the demographics of the study population. It is also possible that the current consequences of arrest are not a large enough deterrent for the many of IPV perpetrators, and that more significantly lower rates of IPV recidivism would come in response to harsher sanctions. In our study, few couples had any police reported IPV in the year prior to the index incident. This may reflect the challenge of measuring IPV recidivism with police records, as there are many IPV incidents that go unreported.

Although this study was not a randomized controlled trial, we believe the findings are still relevant and can inform policy and practice. Unlike the randomized controlled trials and meta-analysis, this study is the first of its size to assess the effectiveness of arrest on IPV recidivism deterrence at a population level. As this study did not randomly allocate arrest and utilized police-records, we were able to enroll all eligible couples

including those with severe forms of abuse that would have been excluded in the other studies. In our study population, it was equally likely perpetrators would be arrested for an arrestable offense as not, maximizing our power and ability to accurately measure the effect of arrest. Since arrest is likely not truly random, we controlled for characteristics that would likely play a role in whether or not a perpetrator was arrested at the index incident including: abuse type, alcohol and drug use, weapon use, survivor injury and cohabitation. Additionally, this study took place after the implementation of mandatory arrest laws in Seattle prompted by the Sherman, et al. findings and sheds light on the effect of the real world implementation of these laws. There have also not been any substantive changes in the Revised Code of Washington State or Seattle Municipal codes that guide arrest for domestic violence since study data was collected.<sup>24</sup>

Our study should be considered in light of its limitations. First, since we do not have data on the primary residences for the couples included in the study, it is possible that migration of survivors and/or perpetrators out of the Seattle area may have differed based on arrest of the perpetrator for the index incident. Holt, et al. were able to maintain follow-up for 12 months in 83% of women with a protection order (PO) and 74% of those without a PO with a subset of our study population.<sup>16</sup> Since a PO can have more legal consequence than an IPV arrest, we expect a similar pattern of non-migration in our arrested and non-arrested groups. Second, although prior studies have shown a greater deterrent effect of arrest among employed men, we were unable to capture perpetrator employment status from police records.<sup>20</sup> If the effect modification found in the Pate, et al. and Berk, et al. studies held true in our study, the true risk estimate for among employed perpetrators would likely be lower than our observed deterrent effect of arrest

on IPV recidivism.

Third, we do not have data on whether or not arrests for the index IPV event led to incarceration. However, we posit that our finding of a deterrent effect of arrest on physical IPV recidivism holds true whether or not the reason for the lower rates of IPV are due to the impact of arrest by itself or subsequent incarceration. Fourth, we were unable to measure non-police reported IPV incidents. It is important to consider that while arrest may decrease IPV recidivism even among non-police reported incidents, the survivor may be motivated to prevent police involvement if they are worried it may result in another arrest for their partner, potentially causing differential reporting by arrest status. We were also unable to consider death of study participants that would have precluded further IPV recidivism within the couple. Finally, there may be uncontrolled confounding due to the quality of data available in police records and the large proportion of couples missing demographic data.

While our study does show an association between arrest and physical IPV recidivism, there are many opportunities for continued research in this area. Future studies might examine whether increasing the proportion of arrests made among arrestable offenses or invoking harsher sanctions of arrest might be associated with even greater effects on reducing of IPV recidivism. Arrest is also a plausible mechanism for IPV reduction. It is plausible that arrest of a perpetrator may decrease re-offenses if they are arrested and subsequently incarcerated. It is also possible that potential financial, social and legal ramifications of future recidivism are sufficient deterrents among arrested men. Although arrest does not prevent all future IPV, any reduction in IPV

events provides an important public health service as each IPV event carries risk of injury and increased risk of poor health outcomes associated with multiple IPV events.

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**Table 1: Characteristics of the study population by arrest status at the index incident**

	<b>Not Arrested</b>		<b>Arrested</b>	
	<b>N = 2,565</b>		<b>N = 2,901</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Perpetrator Race</b>				
White	999	40.0	1,145	39.5
Black	927	36.1	915	31.5
Asian	115	4.5	230	7.9
Hispanic	69	2.7	87	3.0
Native American	36	1.4	60	2.1
Missing	419	16.3	464	16.0
<b>Survivor Race</b>				
White	1,183	46.1	1,355	46.7
Black	688	26.8	669	23.1
Asian	178	6.9	275	9.5
Hispanic	48	1.9	55	1.9
Native American	42	1.6	75	2.6
Missing	426	16.6	472	16.3
<b>Perpetrator Age</b>				
18-24	457	17.8	478	16.5
25-34	853	33.3	1,041	35.9
35-44	629	24.5	829	28.9
>44	390	15.2	535	18.4
Missing	236	9.2	18	0.6
<b>Survivor Age</b>				
18-24	724	28.2	713	24.6
25-34	951	37.1	997	34.4
35-44	556	21.7	769	26.5
>44	334	13.0	422	14.6
Missing	0	0.0	0	0.0
<b>Survivor Alcohol/Drug Use at Index</b>				
	149	5.8	416	14.3
<b>Perpetrator Alcohol/Drug Use at Index</b>				
	200	7.8	942	32.5
<b>Perpetrator and Survivor lived together at Index</b>				
Yes	692	27.0	1,703	58.7
Missing	113	4.4	55	1.9
<b>Relationship at Index</b>				
Married	386	15.1	746	25.7
Dating/Engaged	1,616	63.0	1,801	62.1
Divorced	189	7.4	60	2.1
Child in Common	269	10.5	247	8.5
Separated	105	4.1	47	1.6
<b>Survivor Pregnant at Index</b>				
	57	2.22	99	3.4
<b>Survivor Injury</b>				

None	1,669	65.1	1,118	38.5
Non-visible	265	10.3	362	12.5
Minor-visible	611	23.8	1,367	47.1
Severe-visible	20	0.8	54	1.9
<b>Abuse Characteristics at Index Incident</b>				
Physical	1,272	49.6	2,337	80.6
Psychological	1,293	50.4	564	19.4
<b>Weapon Used</b>	113	4.4	205	7.1
<b>Weapon Type*</b>				
Gun	0	0.0	21	8.1
Knife	12	24.0	72	27.8
Vehicle	5	10.0	10	3.9
Other	33	66.0	156	60.2
<b>Number of Prior Psychological IPV Events in Prior year</b>				
0	2,506	97.7	2,846	98.1
1	44	1.7	42	1.5
2	9	0.4	7	0.2
3+	6	0.2	6	0.2
<b>Number of Prior Physical IPV Events in Prior year</b>				
0	2,504	97.6	2,810	96.9
1	54	2.1	72	2.5
2	5	0.2	17	0.6
3+	2	0.1	2	0.1
<b>Suspect Contacted by Police at Index</b>	201	7.8	2,523	87.0

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\*Among those using a weapon at the index incident

**Table 2: Time to first recurrent IPV event comparing those arrested and not arrested**

	<b>IPV Events*</b>	<b>Risk Set among those arrested*</b>	<b>IPV Events*</b>	<b>Risk set among those not arrested*</b>	<b>Crude Hazard Ratio*</b>	<b>95% CI</b>	<b>Adjusted Hazard Ratio*</b>	<b>95% CI</b>
<b>Physical IPV with or without Psychological IPV</b>								
0-3 months	47	2354	48	2005	0.82	0.56-1.20	0.65	0.42-1.00
4-6 months	38	2307	31	1957	1.07	0.68-1.69	0.91	0.54-1.52
7-12 months	37	2269	38	1926	0.81	0.52-1.26	0.63	0.39-1.01
0-12 months	122	2354	117	2005	0.88	0.69-1.23	0.71	0.54-0.93
<b>Psychological IPV only</b>								
0-3 months	115	2354	127	2005	0.79	0.62-1.01	1.13	0.85-1.49
4-6 months	38	2239	35	1878	1.00	0.64-1.55	0.83	0.50-1.36
7-12 months	50	2201	39	1843	1.10	0.73-1.65	1.10	0.69-1.74
0-12 months	203	2354	201	2005	0.89	0.74-1.07	1.06	0.85-1.32

\* restricted to not missing for covariates

\*\* adjusted for index IPV abuse type, cohabitation, weapon use, police reported survivor injury at the index incident as well as police recorded perpetrator and survivor race.