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## Final Summary Overview

### The Interpersonal Conflict and Resolution (iCOR) Study\*

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The purpose of the Interpersonal Conflict and Resolution (iCOR) study was to inform research on the prevalence and etiology of conflict, victimization, offending and the commonly identified phenomenon referred to as the ‘victim-offender overlap’ in criminology. More specifically, this study was designed to determine the nature, incidence, and coincidence of forms of interpersonal conflict and resulting conflict management styles, including physical violence, in an existing nationally-representative cohort of 18-32 year old adults. Respondent reports of conflicts involving aggressive and violent behavior (offending and victimization) were distinguished for three relationship categories: intimate partner relationships, friends/acquaintances, and relatively unknown persons/strangers. Furthermore, employing a dyadic data collection design, we assessed the nature of conflicts and conflict management behavioral patterns within and outside intimate partner dyads, using information reported by both “Prime” respondents (members of the general population sample who referred an intimate partner to recruitment for an iCOR survey) and three types of counterpart relationships: (1) the Prime’s current intimate partner or spouse, defined as seeing each other, dating, living together, or married; (2) friends, defined as people whom the Prime knows well and feels very friendly towards and who feels friendly toward the Prime in return; and (3) strangers, defined as people the Prime occasionally encounters but doesn’t really know or people whom the Prime has never seen before. The research design covered questions about the nature and frequency of conflicts experienced irrespective of whether the incidents ended violently; conflict management style/tendencies (remedial actions, apologies, accounts); and differences between conflicts that turn violent and those that do not. We also assessed the frequency of violence during the course of disputes, including experiences with physical (e.g., assaultive behaviors, weapon attacks) victimization and the perpetration of violent acts. Finally, we investigated the elements that facilitate conflict escalation that are deemed important theoretical constructs in research on aggression, such as adverse childhood events, low self-control, negative affect, street code attitudes, routine activities/lifestyles, agreeableness, and alcohol and drug use, in addition to demographic and other person-level variables.

## **PROJECT DESIGN AND METHODS**

We conducted three waves of data collection among young adults ages 18-32 (“Primes”). At wave 2, we recruited the intimate “Partners” of the prime respondents for a cross-sectional dyadic survey.

## Data source

Prime respondents to the iCOR study were recruited from the AmeriSpeak Panel, a probability-based panel nationally representative of U.S. households (detailed methods on panel recruitment available<sup>1</sup>). The sample frame is the NORC National Sample Frame, an area probability sample frame constructed by NORC providing sample coverage of over 99% of U.S. households, including a supplemental list of rural households not recorded on the U.S. Postal Service Computerized Delivery Sequence (CDS) File but identified through NORC in-person fieldwork. The AmeriSpeak panel recruitment response rate is nearly 35% (five times the response rate of the Gallup Panel and 10 times the response to the American Trends Panel administered by the Pew Research Center). Following an initial recruitment phase through the U.S. mail, a second stage of in-person recruitment for initial non-responders is implemented to capture harder to reach populations.

To assure national representativeness, we applied statistical weights accounting for recruitment probability; these weights are available in the archived dataset. The panel base weight takes into account a range of sampling and non-sampling error (e.g., non-response to panel recruitment and panel attrition). This panel base weight is then employed in a probability proportional to size (PPS) selection method for drawing sub-samples from the AmeriSpeak Panel. Using demographic and geographic distributions from the most recent monthly U.S. Census Current Population Survey as benchmarks, we conducted a sample-specific post-stratification process (applying an iterative raking procedure) to adjust for survey nonresponse and for any elements related to the study-specific sample design (such as subgroup oversamples of households with youth). The demographic variables used were gender, age, race/ethnicity, education, and Census region. Our weighting procedures resulted in a weighted sample distribution that approximates the US population of 18-32 year old adults, based on the 2016 U.S. Census estimates.

Following standard survey and IRB protocols, recruited respondents were informed in advance and within the online survey that they could refuse to answer any questions or not participate at all. Panelists who consented to participate received an invitation by e-mail to complete the baseline and subsequent iCOR surveys. We followed an at-risk protocol to aid any respondents who requested a referral for help (toll-free telephone and online resources).

## **Baseline surveys and subjects**

The project started with the recruiting of a nationally representative sample of 4,714 households with at least one household member falling in the target age range (panelist age data is recorded for all panel members facilitating recruitment). From this initial sample, 2,284 young adults participated in the baseline (wave 1) survey conducted from August 2016 through April 2017. These respondents are the iCOR “Primes.” At wave 2, 1,629 Primes completed a survey (conducted from December 2016 – September 2017), among whom 1,328 reported that they were in a romantic relationship. Primes who indicated that they were involved in more than one romantic relationship were asked to pick the person with whom they spend the most time, who was subsequently selected to the study and referenced in ensuing questions. Of these Primes with a confirmed and selected Partner, 50% (829 Primes) provided contact information to refer their Partner to the dyadic iCOR survey. Contact information was confirmed enabling invitations to 818 Partners, among whom 480 completed cross-sectional surveys (conducted from December 2016 – October 2017). In that the IRB protocol required that information about survey completion not be shared with the dyads, some Partners completed a survey in instances of the Prime not completing a survey. The final count of dyadic pairs (a completed Prime and a completed Partner survey) was n=466. At wave 3, only the Prime respondents were surveyed (June 2017 – May 2018). Of the 2,204 respondents invited to the wave 3 survey (80 iCOR Primes had permanently refused further participation in AmeriSpeak studies at the time of the wave 3 invitation), 1,603 Primes completed a 3<sup>rd</sup> survey for a total follow-up response rate of 70.1% within the iCOR cohort of Primes.

AmeriSpeak panelists are offered a web or a phone interview options for all surveys. Over nine out of 10 respondents in this young adult sample selected the web-survey option (Primes: 96.9% at wave 1; 98.8% at wave 2; 99.7% at wave 3. Wave 2 Partners: 100%). The iCOR survey was also offered to recruited respondents in both English and Spanish. Nearly all respondents chose to respond to the English language version of survey (Primes: 99.1% at wave 1; 99.4% at wave 2; 99.4% at wave 3. Wave 2 Partners: 100%). Respondents received incentives valued at \$15 for the wave 1 survey, \$30 for the wave 2 survey, and \$50 for the wave 3 survey.

As seen in Appendix Table 1, based on our Wave 1 (baseline) survey, the iCOR Prime sample self-reported as White (53%), Hispanic (19%), Black (16%), Asian (4%) or other race/ethnicity (8%). The average age was 26.3

years old, and the sample was 62.9% female. Other background characteristics on the household for our Prime respondents sample are presented in Table 1. The Partner respondent sample self-reported as White (63%), Hispanic (17%), Black (11%), Asian (5%) or other race/ethnicity (4%). As seen in Appendix Table 2, the average age for the partner sample was 29.2 years old, and the sample was 61.9% male.

## Measures

Measures included in the iCOR survey instrumentation were selected for inclusion based on theory and past empirical research identifying correlates of aggressive and violent behavior. The general population literature regarding aggression and violence is largely centered on intimate partner violence and youth violence, with additional evidence coming from criminal justice and other at-risk samples. The core outcome measures in the Prime instrumentation assessed verbally aggressive communications as well as physical threats and violence, distinguishing perpetration and victimization (with recognition that mutual aggression and violence in interpersonal conflicts is common). These outcomes were assessed for each of three types of relationships: (1) the Prime's current intimate partner, defined as seeing each other, dating, living together, or married; (2) friends, defined as people whom the Prime knows well and feels very friendly towards and who feel friendly toward the Prime in return; and (3) strangers, defined as people the Prime occasionally encounters but doesn't really know or people whom the Prime has never seen before. The wording and coding of the aggression and violence outcomes were developed for the iCOR study based on prior research.<sup>2,3</sup> Additional measures of IPV perpetration and victimization were drawn from the Revised Conflicts Tactics Scale.<sup>4</sup>

Key explanatory variables measured for Primes include measures of conflict management strategies, self-control/impulsivity,<sup>5</sup> agreeableness,<sup>6</sup> depression symptomology,<sup>7</sup> routine activities,<sup>8</sup> street code/honor culture,<sup>9</sup> alcohol use,<sup>10</sup> drug use,<sup>11</sup> exposure to violence,<sup>12,13</sup> exposure to violence in neighborhood<sup>9</sup> and to adverse childhood events (Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System [BRFSS] adverse life events [ACE] module), recent life stressors,<sup>14</sup> and peer relations.<sup>15,16</sup> The iCOR data incorporate additional control measures including common sociodemographic variables, measures of partner communications and cohabitation, and parenting status. The Partner instrument assessed these same measures with the exception of

routine activities and peer relations. In addition to these measures, the partner instrument also assessed relationship care, jealousy, and conflict.

## **DATA ANALYSIS**

The iCOR data were cleaned and recoded using SPSS 23.0. We examined each wave of data for errors or inconsistencies and verified that the data values were correct and conformed to a set of rules. Errors were detected by checking skip patterns, using scatterplots, and histograms. The statistical software packages used in our analyses (SPSS 23.0, Mplus 6.0, 7.0, and Stata 14, 15) allow for the use of sampling weights, adjust for complex sampling, handle missing data, address highly skewed indicators (e.g., % of young adults reporting any physical violence perpetration), and support analysis of variables with different levels of measurement (i.e., nominal to continuous data).

### **Descriptive/exploratory analyses of survey data**

We examined the distribution of our data with and without statistical weights and ran frequencies, measures of central tendency, and measures of dispersion for all study variables. To address the research questions laid out above, we employed bivariate cross-tabulations, comparison of means, and correlations to describe each study sample and the associations between sample variables, including issues of multicollinearity. We performed a variety of bivariate analyses on relevant background variables to determine whether there were statistically significant relationships between the principle explanatory variables (adverse childhood events, recent stressors, alcohol and other drug use, attitudes, affect, conflict management strategies) and the key outcome variables.

### **Multivariate models**

A variety of multivariate analytic techniques were employed to address the research questions, including linear, logistic, tobit, and multinomial regression models; latent class analyses (LCA), structural equation models, and actor partner interdependence models (APIM). For example, many Primes reported no verbal aggression outcomes in terms of the frequency of perpetration and/or victimization, resulting in a distribution marked by left-truncation such that the data were best fit with a tobit model, whereas a physical violence outcome was fit with logit models to accommodate the binary distribution of the data.<sup>17-19</sup> Multinomial regressions, a classification method that generalizes logistic regression to multiclass problems beyond two categories,<sup>20</sup> were estimated to model outcomes associated with the victim/offender overlap (victimization only, offender only, and victimization and offending, compared to the reference group: no aggression/no abuse).<sup>21</sup> Baseline typologies of verbally aggressive behavior

were modeled with a person-centered approach, latent class analysis (LCA), and these profiles were subsequently entered into models as predictors of physical violence victimization and perpetration overall and by relationship contexts (partners, friends, strangers).<sup>22</sup> A study of conflict management strategies as potential mediators of the association between (mutual) verbal conflicts and subsequent physical violence (victimization and perpetration modeled as separate outcomes) applied structural equation models.<sup>23</sup> Dyadic analyses, drawing on response data replied independently by Primes and their linked Partners, are modeled using APIM<sup>24</sup> in one instance,<sup>25</sup> and with multinomial logistic regression models to assess agreement and discordance between partners' reporting of IPV in another study.<sup>26</sup>

## FINDINGS

The findings for this study are reported in seven manuscripts (prepared to date) that currently are under peer review<sup>18,19,21,22</sup> or are ready for submission.<sup>23,25,26</sup> Results have been presented at a 2017 national conference and are scheduled for further presentation in November 2018. In this summary report, we highlight our key findings; further detail is available from the authors (until the point at which these studies are accepted for publication).

Mumford et al.<sup>18</sup> draws on the full weighted study sample of 2,284 young adult respondents (Primes), of whom 1,561 reported being in an intimate partnership. The prevalence of verbal aggression perpetrated by young adults declined with the intimacy of the relationship, such that aggression against a partner (72%) exceeded aggression directed at friends (43%) and strangers (34%). Similar rates of physical violence (about 9%) were reportedly perpetrated against partners, friends, and strangers. The study design drew on neurobiological explanations for the link between childhood adversity and subsequent aggressive behavior<sup>27-30</sup> to investigate risk factors for both the aggression and violence outcomes. Adjusting for a range of personal characteristics, both adverse childhood experiences and recent stressors exhibited direct associations with verbal and physically aggressive outcomes.

Taylor et al.<sup>21</sup> draw on a subset of the baseline sample of Primes (n=871 women plus n=690 men who reported being in an intimate partnership) to examine the traditional overlap of victimization and offending behavior covering three aggression outcomes (psychological, physical, and sexual abuse). The study further advances the field by comparing the victim-offender overlap in partnered relationships — in other words, IPV — to the same phenomenon in non-partnered relationship (i.e., relationships between the Prime and Friends/Strangers). Results from this study

point to a high degree of overlap between victimization and offending across the three abuse outcomes, as well as a modestly consistent set of risk factors for the victim-offender overlap for partner and non-partner abuse experiences, including an association between conflict management styles and low-self-control and the victim-offender overlap.

The person-centered approach of Liu et al.<sup>22</sup>, drawing on problem behavior<sup>31</sup> and social learning theories<sup>32</sup> revealed six profiles of psychological aggression exhibiting victimization and perpetration in various combinations by relationship type. The six profiles spanned from Low Aggression (16.7% of the sample) to Consistent Aggression (17.1%) across relationship types, and included classes of individuals reporting aggression towards Partners only (21.8%), towards Partners and Friends (not Strangers) (26.2%), towards Partners and Strangers (not Friends) (13.9%), and towards Friends and Strangers (not Partners) (5.2%). Aggression profiles were found to be significantly associated with physical violence perpetration and victimization overall and in each of the three relationship contexts.

Berg et al.<sup>19</sup>, used a social interactionist framework to investigate the link between depression and subsequent violence.<sup>33,34</sup> Specifically, findings from this iCOR paper indicate that depressed individuals are frequently involved in verbal conflicts that create situational opportunities for violent encounters, and that substance abuse co-morbidity in the form of illicit drug use may account for some of the effects of depression on both conflict and violent behavior, consistent with other studies. However, the findings suggest that reported child abuse does not account for the linkage between depression and violence in adulthood although individuals who suffered abuse as children are more likely to become involved in verbal conflicts in adulthood, and consequently, to engage in physical violence. The findings also withstood controls for self-reported violent victimization in supplementary analyses.

In a separate study by Berg et al.<sup>23</sup> drawing on subcultural theorizing and the street code<sup>35,36</sup> among a general population sample of young adults confirms prior research findings that the street code is positively associated with involvement in verbal conflicts (mutual, victimization, and offending) and with disputatiousness as a conflict management strategy, and negatively associated with remedial (conciliatory) efforts. Second, the results showed that disputatiousness mediated the association between verbal conflicts and subsequent physically violent offending and victimization, and that remedial actions also serve as a mediator of violence perpetration (but not victimization). Third, this study shows that remedial actions are constructive in mitigating the effect of disputatiousness as a mechanism between verbal conflicts and subsequent physical violence.

The final two manuscripts prepared for submission during this funded period make use of the unique dyadic data afforded by the iCOR study design. Johnson et al.<sup>25</sup> findings indicated that the adoption of a street code were associated with both actor and partner effects related to higher levels of psychological aggression. Actor and partner effects for psychological aggression were also present for adverse child experiences of emotional and physical abuse, anxiety and depression screen, and love and caring. Partner effects were only observed for self-control and recent life stressors. No associations were observed for problem drinking and illicit drug use. Thus, consistent with our first hypothesis and prior dyadic analyses, an individual's level of psychological aggression was determined not only by their own risk profile, but that of their partner's as well. Partner and individual-level risk factors for psychological aggression operated similarly for men and women. In addition, we found no significant interaction between actor effects and partner effects. Instead, our findings suggested that risk factors associated with the individual and those associated with the partner both contributed to each individual's psychological aggression independent of the other. Liu et al.<sup>26</sup> assessment of male and female young adults' concordance on reports of psychological, physical, and sexual IPV suggests great discordance with relatively low agreement regarding men's perpetration of and women's victimization of IPV, and vice versa. The pattern of concordance differed across types of IPV, e.g., couples tend to agree on the occurrence of psychological IPV, while they tend to agree on the non-occurrence of physical and sexual IPV. Several covariates were significantly related to the pattern of concordance. For example, couples who perceive their relationship as having a high level of conflict tend to agree in their reports of psychological aggression occurrence, but they may disagree on physical IPV (i.e., when they perceive the relationship has high conflict, at least one of them tend to report physical IPV). Personal characteristics also play a role in the reporting of IPV. For example, when there is a large age difference, women tend to underreport physical or sexual IPV; men who self-report with high self-control tend to over-report psychological aggression; and when the male partner is more aggressive, the reporting is likely not very accurate for psychological aggression, although both parties tend to affirmatively report physical IPV.

### **IMPLICATIONS FOR CRIMINAL JUSTICE POLICY AND PRACTICE IN THE U.S.**

Funding for the iCOR project has resulted in an innovative, nationally representative, longitudinal data collection yielding three waves of data regarding conflict/aggressive behaviors and conflict management strategies (across

three different forms of relationships: partners, friends, and strangers) among young adults in the United States. Further, this project has collected data from the respondent cohort's intimate partners (cross-sectional) to potentiate dyadic analyses and to gain the partners' perspectives on the prime respondents' conflict behavior and conflict management strategies. These data are a unique resource potentiating extensive further secondary data analyses in this young adult nationally representative sample of U.S. households. Moreover, the project instruments and protocols for recruiting young adult partners to participate in a cohort dyad study for online or telephone administration serve as important methodological innovations that may be helpful to other researchers going forward.

The iCOR research studies have drawn on a rich array of theoretical models to investigate aggression and violence outcomes, with the purpose of advancing thinking about the integration of often unconnected theoretical frameworks to criminological studies. For example, our research highlights the possible value of integrating subcultural research with social psychological models and the potential for this work to advance our understanding of crucial empirical patterns including the victim-offender overlap. Further attention to neurobiological impacts on emotional and behavioral regulation is also supported by the iCOR research, extending past work from convenience samples to this general population study. Traditional theoretical models including social learning theory, problem behavior theory, routine activities theory, self-control theory, and social interaction theory are also reflected in the iCOR study design and research findings.

These iCOR data and analyses have advanced the field of research regarding the victim-offender overlap by documenting the national prevalence of aggression and violence outcomes beyond intimate partnerships, but also between friends and strangers. The iCOR project is also one of the few national studies on offending behavior, most prior aggression studies cover just victimization. Beyond prior IPV studies, there have not been comparable general population studies of young adult aggression and violence distinguishing partners, friends and strangers. Understanding the prevalence of these outcomes in a general population sample and the extent to which explanatory variables are consistent predictors of victimization, perpetration, or mutually aggressive/violent behavior is a significant addition to the field. From confirming the predictive role of early childhood adversities and depressive symptomology, to identifying the role of both disputatious and conciliatory conflict management strategies, iCOR results further document that often the explanatory variables associated with aggression and violence are consistent

for both perpetration and victimization, a finding consistent with the high prevalence of mutuality in aggression and violence.

The unique design of the iCOR study allows the close examination of interpersonal aggression and violence in three separate types of relationships. Our work points to the importance of breaking down substantive silos, i.e., encouraging research that explores the overlap and interplay of intimate and non-intimate relationship violence within the same study. Findings also highlight that individuals may be involved in aggression and violence in different relationship contexts, and point to the need for preventive interventions to focus on whether involvement in aggression and violence is happening in some or all relationships in order to tailor intervention strategies.

The dyadic design of the iCOR study provided a unprecedented opportunity to explore the agreement and discordance of the reporting of IPV between couples in a fine-grained fashion, separately for male perpetration and female victimization and vice versa, as well as separately for three subtypes of IPV, namely psychological, physical and sexual. Findings highlight the potential bias associated with the method of relying on single party's reports of IPV as used in the majority, if not all, studies of IPV, and raised important questions for future studies of reporting bias of IPV and other interpersonal violence. In addition to comparing couple's reporting of IPV, the iCOR study also asked detailed information about both the couple's personality traits, conflict management style, and violence history, allowing the investigation of how dyadic characteristics (e.g., not only one's own attitudes and self-control but that of one's partner) predict an individual's perpetration of aggression.

In conclusion, the iCOR project has filled a number of important gaps in criminology regarding the role of conflict preceding violence and how conflict management strategies can help escalate these conflicts into episodes of violence. The team's journal articles also have included suggestions to program developers on how these results can be incorporated into prevention efforts. In addition, the project further documents the victim-offender overlap phenomenon and builds on the considerable literature on predicting this overlap with some new risk factors. The iCOR project data will be publically available through the ICPSR archive in 2019 for others researchers to continue to explore and help draw out additional policy implications to better inform violence prevention strategies.

**Appendix Table 1. Base sample description\*, ages 18-32, iCOR 2016-2017,**

	n	% / mean (S.D.)
Age	2284	26.3 (4.1)
Gender		
Female	1437	62.9%
Male	847	37.1%
Race/ethnicity		
White	1207	52.9%
Black	362	15.8%
Hispanic	443	19.4%
Asian	101	4.4%
Other	171	7.5%
Household characteristics		
Median household income		\$37,500
Household size (mean & median)		3.04 & 3
Household income \$100,000+	268	11.7%
Marital/cohabitation status		
Not partnered (reference)	625	27.4%
Partnered, Separate Residences	500	21.9%
Partnered, Shared Residence	1156	50.6%
Education		
Never graduated high school	132	5.8%
High school	449	19.7%
Some college	963	42.2%
4-year college degree or >	740	32.4%
Location of residence		
South	841	36.8%
West	591	25.9%
Midwest	553	24.2%
Northeast	299	13.1%
Urban	2061	90.2%
Non-urban	223	9.8%
Access to the internet	1938	84.9%

\*AmeriSpeak Panelists for whom background data is available.

**Appendix Table 2. Partner sample description, iCOR 2016-2017**

	n	% / mean (S.D.)
Age	480	29.2 (5.5)
Gender		
Female	183	38.1%
Male	297	61.9%
Race/ethnicity		
White	301	62.7%
Black	51	10.6%
Hispanic	82	17.1%
Asian	25	5.2%
Other	21	4.4%
Education		
Never graduated high school	22	4.6%
High school	14	2.9%
Some college	207	43.1%
4-year college degree or >	237	49.4%

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