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Victimization Prior to Jail: The Effect of Physical and/or Sexual Victimization on Mental Health and Substance Use Disorder in a Population of Jailed Inmates

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Victimization Prior to Jail

The Effect of Physical and/or Sexual
Victimization on Mental Health and Substance
Use Disorder in a Population of Jailed Inmates

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EXECUTIVE SUMMARY

Previous research shows a link between abuse histories and negative outcomes, including a relationship between abuse victimization and mental illness and/or substance use disorder¹ and between such victimization and criminal behavior.² The relationship between abuse and offending or reoffending is likely indirect, working by way of mental illness and/or substance use disorder.³ However, the effects of these abuse experiences prior to incarceration as well as the impact of abuse perpetrator type and abuse timing on mental health and substance use outcomes have been underexplored in *jail* populations. The current analysis addresses this gap.

From February 21st, 2017 to September 12th, 2017, people admitted to jail were screened by intake staff, and these assessments supplemented administrative admissions data. Assessments included 79 questions developed by jail administrators and a research team of faculty research partners. A total of 4,713 individuals were admitted to the jail, including people detained for pretrial purposes and those convicted and sentenced to jail. The majority of the population (72.3%) reported no history of abuse, but 17.5% indicated a history of physical abuse, 3.2% a history of sexual abuse, and 10.0% a history of polyvictimization (both physical and sexual abuse). Further, 43.6% of jailed individuals had a high level of an internalizing disorder while 19.4% had a high level of an externalizing disorder. Lastly, 28.5% of the population had a substance use disorder. We found evidence to suggest that a history of physical abuse has similar effects for men and women on the likelihood of internalizing disorders but that a history of sexual abuse had a larger influence on women. Polyvictimization also predicted internalizing disorders for men and women. Similarly, a history of physical abuse resulted in greater odds of externalizing disorders across sex, but a history of sexual abuse significantly predicted externalizing disorders for women only. In contrast, polyvictimization predicted greater odds of externalizing disorders for men. A history of victimization was largely unrelated to substance use disorder with the exception of polyvictimization reported by men. Regarding the perpetrator of abuse, the strongest effect was found for perpetration by a non-stranger, resulting in greater odds of internalizing disorders (all abuse types) and externalizing disorders (only physical abuse and polyvictimization). A history of victimization by either a non-stranger or stranger was largely unrelated to substance use disorder. For abuse timing, the strongest effects were found for abuse experienced prior to age 18 for internalizing and externalizing disorders. Timing of abuse was largely unrelated to substance use disorder as an outcome. Finally, across analyses, substance use disorder was significantly related to internalizing and externalizing disorders and vice versa.

Taken together, we found that a history of physical and/or sexual abuse were significantly associated with mental health outcomes across men *and* women in jail whereas past research has focused primarily on the link between abuse, mental illness, substance use, and offending/reoffending amongst women. However, a history of abuse was largely unassociated with substance use disorder as an outcome, which is counter to past research in justice-involved youth and people incarcerated in prisons. Instead, our findings suggest that, rather than being an intervening variable between abuse histories and criminal behavior, which appears to be the case for internalizing and externalizing disorders in our study, substance use disorder may not act as an indirect pathway between abuse and offending but may still affect criminal behavior by way of mental illness or vice versa.

¹ DeHart et al. (2014).

² Meade et al. (2021); Spohn (2000).

³ Salisbury & Van Voorhis (2009).

INTRODUCTION

Victimization is interrelated with other maladies, such as mental illness or substance use disorder.⁴ While research has addressed the negative outcomes of victimization for people under community supervision⁵ and adults in the prison system,⁶ less is known regarding the effect of victimization on these outcomes for adults incarcerated in jails.⁷ Further study of jails is needed as these facilities house pretrial detainees and are the starting point for people sentenced to prison. Research is further limited with respect to the effect of the type of abuse, perpetrator type, and timing of abuse.

Substance use disorders are especially relevant to abuse victimization and mental illness as they may result from a mental illness or co-occur with them.⁸ Failure to address mental illness in people also experiencing substance use disorder can lead to poorer treatment outcomes⁹ and may interfere with successful reentry. All of these attributes – histories of abuse, mental illness, and substance use disorder – are common in justice-involved populations.¹⁰ Further, much of the research examining the interconnectedness of abuse, mental illness, and substance use disorder has focused on justice-involved women rather than men.¹¹ It is critical to address these factors amongst both men and women because failure to identify them can result in diminished efficacy of programming, and subsequently, reentry.¹²

This project examined the association between physical and/or sexual abuse, internalizing and externalizing disorders, and substance use disorder among a jail population of men and women from February 21st, 2017 to September 12th, 2017 in one state. After surveying the differential effect of abuse types (physical, sexual, and polyvictimization) among jailed men and women's internalizing disorders, externalizing disorders, and substance use disorders, we examined the specific effects of abuse perpetrator type and abuse timing amongst the total sample.¹³

After providing a summary of the measures used in this report, we discuss three questions that this study was designed to address and the evidence related to each. After a brief conclusion, Appendix A provides a detailed description of the methodology used in this study. Appendix B displays tables of data used in the creation of this report, and Appendix C provides a list of references.

⁴ Bloom et al. (2004); Dalbir et al. (2022); Radatz & Wright (2017); Salisbury & Van Voorhis (2009).

⁵ Givens & Cuddeback (2021); Givens et al. (2022).

⁶ Cain et al. (2016); Maschi et al. (2019); Meade & Steiner (2013).

⁷ See Dalbir et al. (2022) for an exception.

⁸ Al-Rousan et al. (2017); Kelly & Daley (2013); Lieb et al. (2010).

⁹ Boden & Moos (2009); Compton et al (2003); Kelly & Daley (2013).

¹⁰ Givens & Cuddeback (2021); Givens et al. (2022); James & Glaze (2006); Karlsson & Zielinski (2020).

¹¹ For exceptions, see Cain et al. (2016); Dalbir et al. (2022); Heirigs et al. (2020); Maschi et al. (2019); Meade & Steiner (2013).

¹² Miller & Najavits (2012).

¹³ We were unable to study sex-specific effects of abuse perpetrator type and abuse timing as a result of too few jailed persons reporting a history of abuse victimization, limiting the statistical power of analyses.

PRIMARY MEASURES

Experiences of victimization were the primary predictor measures in this study. Specifically, we focused on physical abuse, sexual abuse, or polyvictimization. Persons in the study could have *no history of abuse* (physical or sexual), a *history of physical abuse only* (and no history of sexual abuse), a *history of sexual abuse only* (and no history of physical abuse), or *polyvictimization* (a history of physical and sexual abuse). In addition to these measures, we also examined abuse perpetrator type and timing of abuse. We identified whether jailed persons reported *no history of abuse*, *abused by a stranger*, or *abused by a non-stranger*. For timing of abuse, a person could have reported *no history of abuse*, *abuse before age 18*, *abuse after 18*, or *abuse before and after 18*. These latter measures – abuse perpetrator type and timing of victimization – were assessed separately for physical abuse, sexual abuse, and polyvictimization.

Outcome variables under study included internalizing serious mental illnesses, externalizing serious mental illnesses, and substance use disorder.¹⁴ These outcomes were created from responses to the Global Appraisal of Individual Needs-Short Screen (GAINS), which is a clinical, biopsychosocial assessment that measures behavioral and substance use concerns.¹⁵ Internalizing and externalizing symptoms were dichotomized as *high internalizing serious mental illnesses* and *high externalizing serious mental illnesses* (high = three or more symptoms). The TCU drug screen¹⁶ was used to identify *substance use disorder* (either no disorder or presence of a disorder).

¹⁴ Notably, these measures were also used as predictor variables, where internalizing and externalizing serious mental illnesses were controlled to predict substance use disorder as an outcome while substance use disorder was retained as a control to predict internalizing and externalizing serious mental illnesses as outcomes.

¹⁵ Dennis et al. (2006).

¹⁶ Knight et al. (2018).

RESULTS

MONOVICTIMIZATION AND POLYVICTIMIZATION

Overall, much of the population did not report a history of physical and/or sexual abuse prior to their intake to jail. Figure 1 shows that women were more likely to report monovictimization – physical abuse only (17.9% of women and 17.1% of men) and sexual abuse only (4.0% of women and 2.9% of men). In contrast, a higher percentage of men (10.1%) indicated polyvictimization compared to women (9.3%). However, there were not statistically significant differences between men and women in their history of abuse, whether it was monovictimization or polyvictimization. Binary logistic regressions were used to examine the effect of abuse on the outcomes. See Appendix A for further details regarding the methodology employed for this study.

Figure 1. Abuse Type by Sex

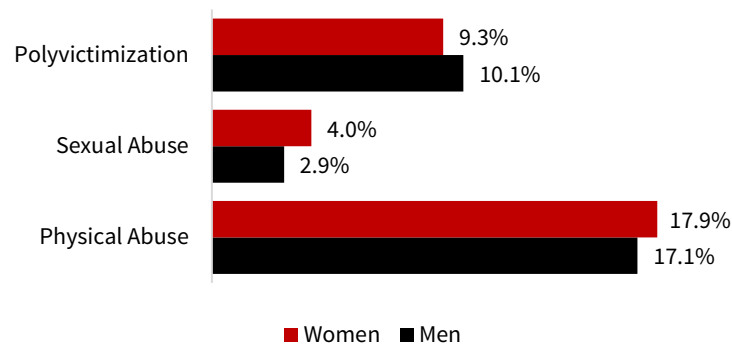
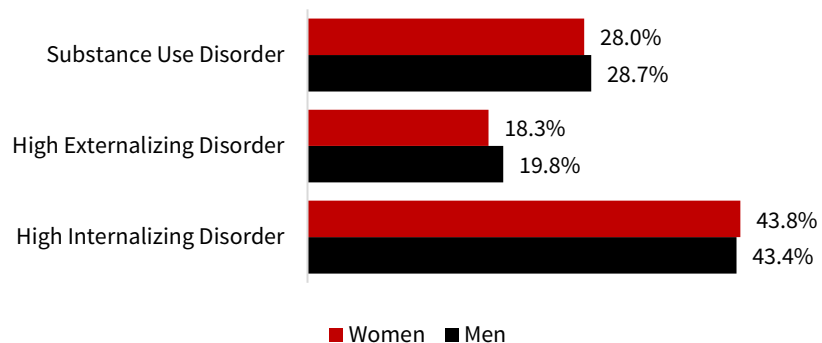


Figure 2 displays the outcome measures by sex. While women (43.8%) reported a higher frequency of internalizing disorders than men (43.4%), men indicated a greater level of both externalizing (19.8%) and substance use disorders (28.7%) than women (18.3% and 28.0%, respectively). Importantly, there were not significant differences between men and women in their prevalence of internalizing, externalizing, or substance use disorders.

Figure 2. Internalizing, Externalizing, and Substance Use Disorders by Sex



The following figures show the breakdown of abuse type by outcome for men and women.¹⁷ Figure 3 demonstrates that men who were physically abused reported higher levels of all outcome measures – 60.5% an internalizing disorder, 29.4% an externalizing disorder, and 37.8% substance use disorder – compared to women (59.5%, 28.6%, and 36.2%, respectively). Table B2 in Appendix B shows findings from the binary logistic regressions for internalizing disorders. A history of physical abuse predicted higher odds of internalizing disorders for men and women ($p < .001$), but this effect did not differ significantly between the two groups. Table B3 in Appendix B displays findings for externalizing disorders, where a history of physical abuse significantly predicted higher odds of externalizing disorders for men ($p < .001$) and women ($p < .01$), but this effect was not significantly different between the two groups. Table B4 in Appendix B provides findings for substance use disorder as an outcome. A history of physical abuse was not significantly associated with substance use disorder for either men or women.

Figure 3. Rate of Internalizing, Externalizing, and Substance Use Disorders by Persons Physically Abused

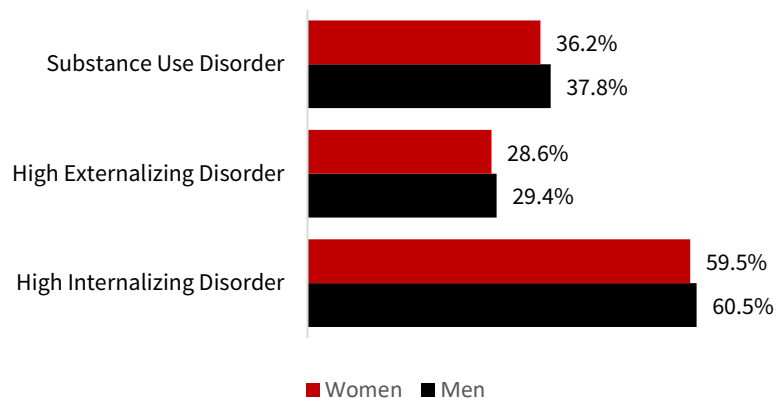


Figure 4 displays differences between men and women with a history of sexual abuse and prevalence of their outcomes. In contrast to a history of physical abuse, women who reported a history of sexual abuse indicated a higher prevalence of all three outcomes – 71.4% an internalizing disorder, 31.4% an externalizing disorder, and 42.9% substance use disorder – compared to men (54.4%, 14.7%, and 33.8%, respectively). Regarding internalizing disorders as an outcome where controls were included (see Table B2), a history of sexual abuse resulted in significantly greater odds for men ($p < .05$) and women ($p < .001$). The difference in these effects across sex was statistically significant ($p < .001$). A history of sexual abuse also predicted a significantly greater likelihood of externalizing disorders for women ($p < .05$) but was not significantly associated to externalizing disorders for men (see Table B3). As with a history of physical abuse, a history of sexual abuse was not significantly related to substance use disorder as an outcome (see Table B4).

¹⁷ Note, frequencies may not sum to 100% because a person could experience more than one of the outcome measures (e.g., internalizing and externalizing disorders).

Figure 4. Rate of Internalizing, Externalizing, and Substance Use Disorders by Persons Sexually Abused

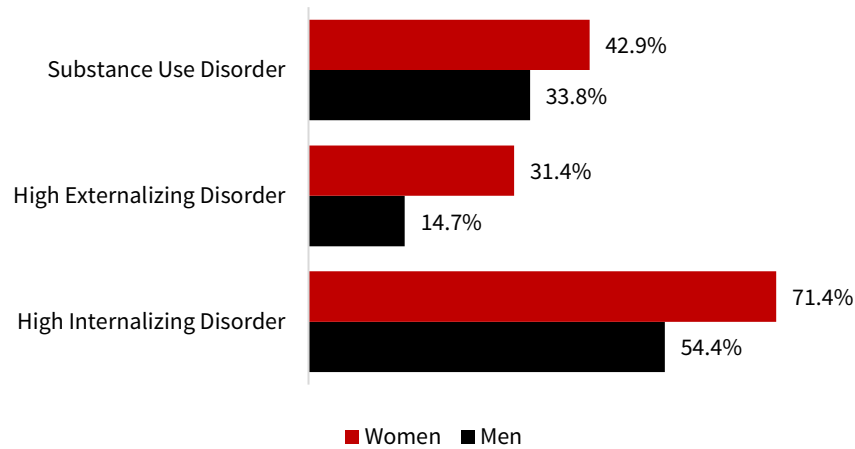
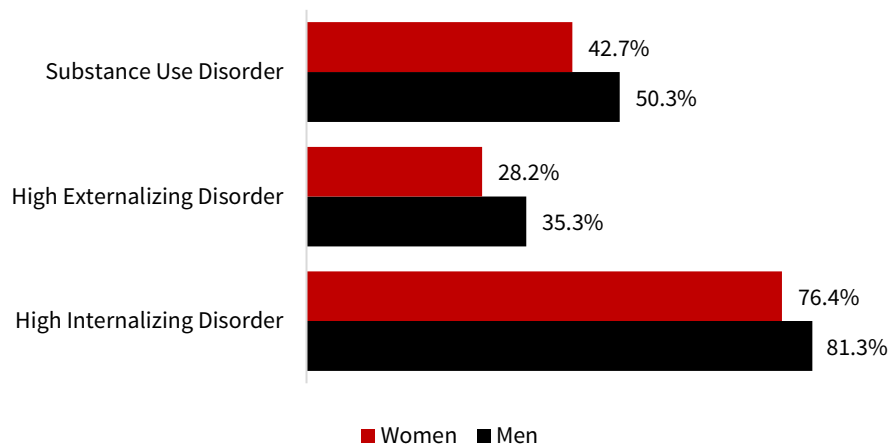


Figure 5 shows prevalence rates of the outcomes for people who experienced polyvictimization. Men reported a greater frequency of all three measures – 81.3% an internalizing disorder, 35.3% an externalizing disorder, and 50.3% a substance use disorder – compared to women (76.4%, 28.2%, and 42.7%, respectively). Polyvictimization was predictive of internalizing disorders for both groups ($p < .001$), but this effect did not vary significantly across sex (see Table B2). A history of polyvictimization was significantly related to greater odds of externalizing disorders for men only ($p < .001$). Yet, this effect did not produce a significant difference between men and women (see Table B3). Polyvictimization also led to greater odds of substance use disorder for only men ($p < .05$), but this effect did not differ significantly between men and women (see Table B4).

Figure 5. Rate of Internalizing, Externalizing, and Substance Use Disorders by Persons Who Experienced Polyvictimization



PERPETRATOR TYPE

Figure 6 provides the frequency of perpetrator type by abuse type. For all abuse types, victimization by a non-stranger was much more common (90.3% for physical abuse, 84.9% for sexual abuse, and 89.6% for polyvictimization) compared to victimization by a stranger (9.7%, 15.1%, and 10.4%, respectively).

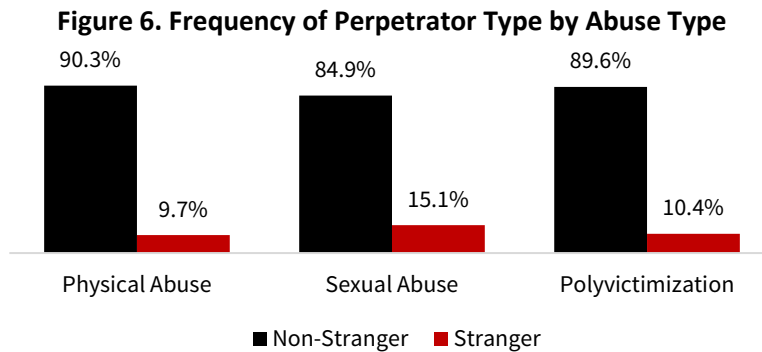


Figure 7 shows the prevalence of stranger or non-stranger victimization for people who indicated a history of physical abuse and the breakdown by outcome type. People physically abused by a non-stranger were more likely to have an internalizing disorder (60.9%) compared to those physically abused by a stranger (54.5%). However, people physically abused by a stranger were more likely to indicate an externalizing disorder (31.8%) than those victimized by a non-stranger (28.8%). Similarly, substance use disorder was more likely for people physically abused by a stranger (42.4%) than it was for those physically abused by a non-stranger (36.4%). Table B5 in Appendix B shows the effect of perpetrator type on the outcomes for people who were physically abused when controls were included. Physical abuse by a non-stranger resulted in greater odds of internalizing disorders ($p < .001$) and externalizing disorders ($p < .001$). Additionally, physical abuse by a stranger resulted in heightened odds of a substance use disorder ($p < .05$).

Figure 7. Frequency of Perpetrator Type for Physical Abuse by Internalizing, Externalizing, or Substance Use Disorder

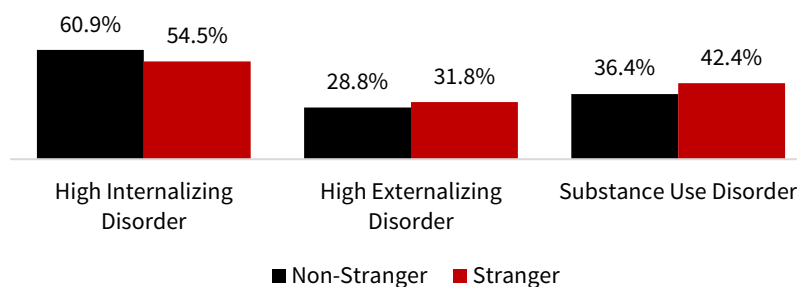


Figure 8 provides frequencies regarding the prevalence of internalizing, externalizing, and substance use disorders for people sexually abused by a stranger or non-stranger. Sexual abuse by a stranger resulted in higher rates of internalizing (62.5%), externalizing (20.0%), and substance use disorder (50.0%) compared to a history of sexual abuse by a non-stranger (60.0%, 20.0%, and 34.4%, respectively). When controls were included (see Table B5 in Appendix B), sexual abuse by a non-stranger led to greater odds of internalizing disorders ($p < .001$). However, sexual abuse by a non-stranger was not significantly associated with externalizing or substance use disorders. Similarly, sexual abuse by a stranger was not significantly related to any of the outcomes.

Figure 8. Frequency of Perpetrator Type for Sexual Abuse by Internalizing, Externalizing, or Substance Use Disorder

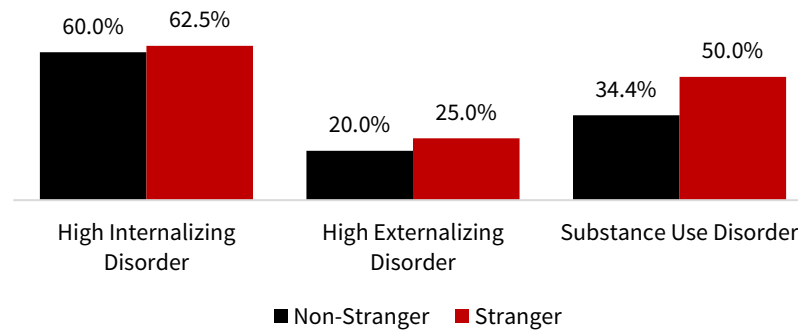
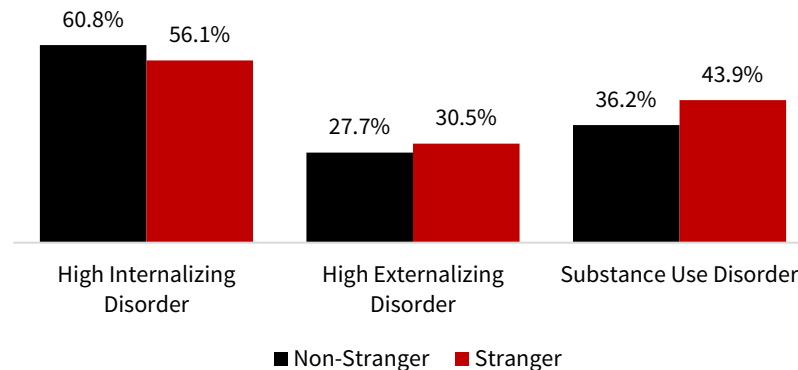


Figure 9 shows the rate of perpetrator type by the outcomes for people who experienced polyvictimization. Victimization by a non-stranger resulted in a greater likelihood of an internalizing disorder (60.8%) compared to victimization by a stranger (56.1%). In contrast, polyvictimization by a stranger (30.5%) yielded a higher rate of externalizing disorders compared to victimization by a non-stranger (27.7%). Similarly, victimization by a stranger (43.9%) led to a greater frequency of substance use disorder compared to victimization by a non-stranger (36.2%). Table B5 in Appendix B provides the findings for the effect of perpetrator type on the outcomes. For the total sample, polyvictimization by a non-stranger resulted in greater odds of internalizing and externalizing disorders ($p < .001$). However, there was not a significant relationship with substance use disorder as the outcome. Moreover, polyvictimization perpetrated by a stranger was not significantly associated with any of the outcomes.

Figure 9. Frequency of Perpetrator Type for Polyvictimization by Internalizing, Externalizing, or Substance Use Disorder



TIMING OF ABUSE

Figure 10 displays frequencies of victimization type by timing of abuse. People who reported any abuse type were more likely to be victimized before age 18 (47.1% physical abuse, 69.8% sexual abuse, and 50.1% polyvictimization). Abuse after age 18 was the next most common (33.5%, 17.9%, and 31.4%, respectively), followed by victimization before and after age 18 (19.4%, 12.3%, and 18.4%, respectively).

Figure 10. Frequencies of Abuse Type by Timing of Abuse

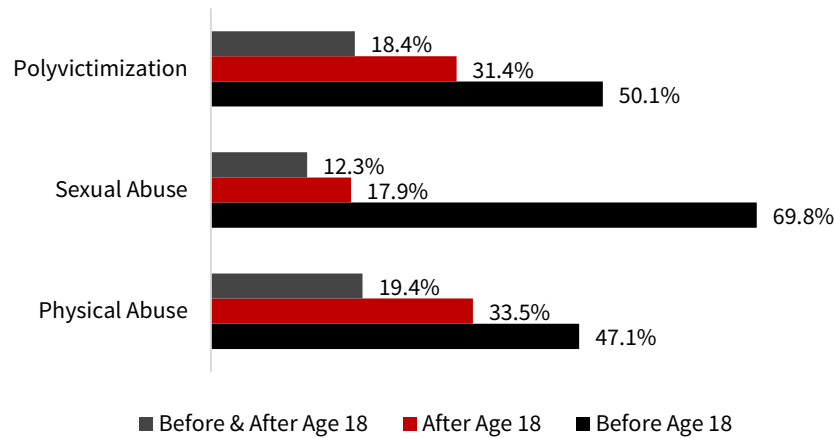


Figure 11 breaks down abuse timing by the outcomes for people who were physically abused. Physical abuse before and after age 18 resulted in the greatest rate of internalizing disorders (73.5%) compared to abuse before age 18 (61.9%) or abuse after age 18 (50.4%). Similarly, physical abuse before and after age 18 (38.6%) led to the highest prevalence of externalizing disorders compared to abuse before age 18 (33.1%) or after age 18 (18.0%). Finally, abuse before and after age 18 (41.7%) resulted in the greatest rate of substance use disorder, followed by abuse before age 18 (38.4%), and then after age 18 (32.5%). Table B6 provides details of the effects of abuse timing on the outcomes when controls were included. Physical abuse experienced prior to age 18 resulted in significantly greater odds of internalizing and externalizing disorders ($p < .001$). However, physical abuse after age 18 resulted in greater odds of internalizing disorders only ($p < .05$). Physical abuse before and after age 18 was significantly associated with greater odds of internalizing and externalizing disorders ($p < .001$).

Figure 11. Frequency of Abuse Timing for Physical Abuse by Internalizing, Externalizing, or Substance Use Disorder

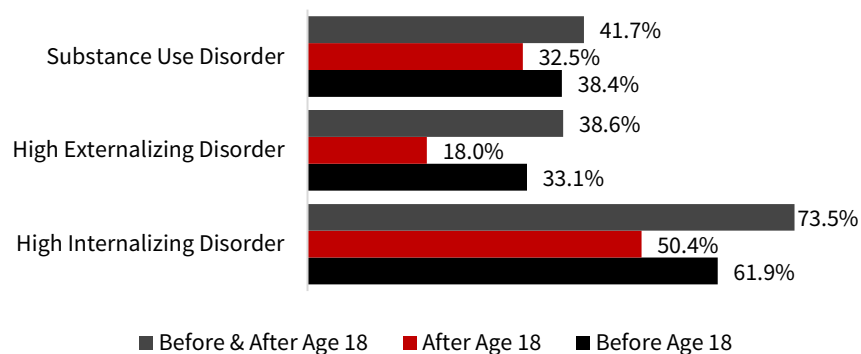


Figure 12 provides frequencies for abuse timing by outcome type for people with a history of sexual abuse. Sexual abuse before and after age 18 (69.2%) was most frequent for internalizing disorders, followed by abuse experienced after age 18 (68.4%), and then abuse before age 18 (56.8%). For externalizing disorders, sexual abuse before and after age 18 (38.5%) was most prevalent, then abuse before age 18 (18.9%), and lastly, abuse after age 18 (15.8%). Sexual abuse before and after age 18 (61.5%) resulted in the highest rate of substance use disorder compared to abuse before age 18 (35.1%) or abuse after age 18 (26.3%). Table B6 displays findings related to the effect of sexual abuse timing on internalizing, externalizing, and substance use disorders. Sexual abuse before the age of 18 led to significantly increased odds of internalizing disorders only ($p < .05$). Sexual abuse after age 18 resulted in greater odds of internalizing disorders ($p < .05$) but was unrelated to externalizing disorders. Lastly, sexual abuse before and after age 18 was not significantly related to any of the outcomes.

Figure 12. Frequency of Abuse Timing for Sexual Abuse by Internalizing, Externalizing, or Substance Use Disorder

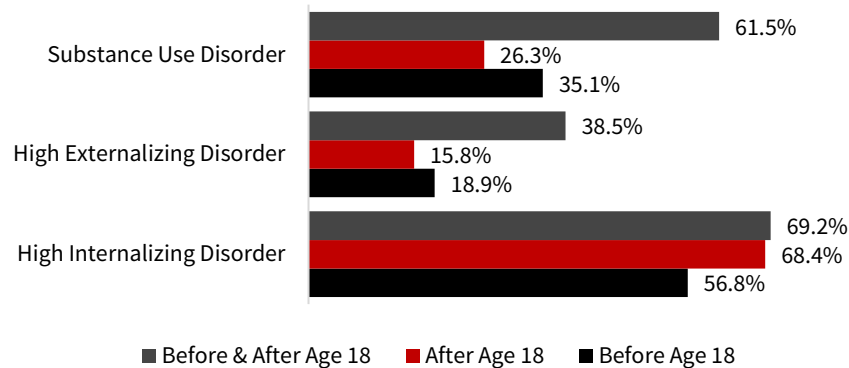
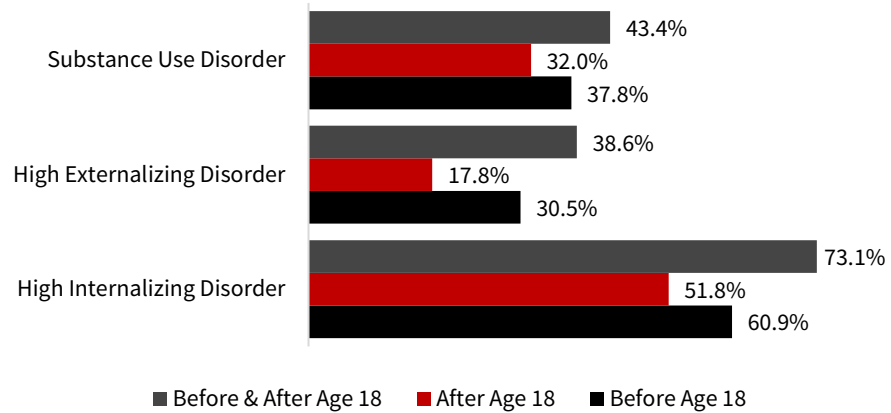


Figure 13 shows the rate of abuse timing for people who experienced polyvictimization for each outcome. People who were polyvictimized before and after age 18 had the highest rate of internalizing disorders (73.1%) compared to abuse before age 18 (60.9%) and abuse after age 18 (51.8%). For externalizing disorders, abuse before and after age 18 (38.6%) was again most prevalent, followed by abuse before age 18 (30.5%) and abuse after age 18 (17.8%). Polyvictimization before and after age 18 (43.4%) was also most common for substance use disorders compared to abuse before age 18 (37.8%) or after 18 (32.0%). Table B6 shows findings for the effect of polyvictimization timing on the outcomes with control measures included. Polyvictimization prior to age 18 was associated with greater odds of internalizing and externalizing disorders ($p < .001$). In contrast, polyvictimization after age 18, as well as polyvictimization before and after age 18, were only significantly related to greater odds of internalizing disorders ($p < .001$). None of the abuse measures were related to substance use disorder as an outcome with the exception of polyvictimization before and after age 18 ($p < .05$).

Figure 13. Frequency of Abuse Timing for Polyvictimization by Internalizing, Externalizing, or Substance Use Disorder



Notably, for all models (abuse type, perpetrator type, and timing), presence of a substance use disorder significantly predicted internalizing and externalizing disorders (as outcomes). Likewise, internalizing and externalizing disorders were significantly related to higher odds of substance use disorder (as an outcome). These results, although not the primary focus of this study, demonstrate the interconnectedness of these disorders.

CONCLUSION

Research demonstrates the damaging impact of abuse on behavioral and mental health among justice-involved youth and prison samples.¹⁸ Studies have also demonstrated the effect of abuse timing and perpetrator type in incarcerated persons.¹⁹ The current study adds to this literature through examination of jailed persons who have experienced monovictimization or polyvictimization in addition to an assessment of the effect of who victimized these *jailed* individuals and when abuse occurred. Results from this research have implications for jail practices and policies.

An analysis of monovictimization and polyvictimization on internalizing, externalizing, and substance use disorders showed that the effects of abuse on these outcomes were unique between male and female jailed persons. While abuse was related to higher odds of internalizing or externalizing disorders for men and women, a history of physical abuse had a similar impact for men and women, but a history of sexual abuse led to a greater effect on women's mental health outcomes. However, polyvictimization displayed a greater impact for men across internalizing and externalizing disorders. Regarding abuse timing and perpetrator type, childhood abuse, abuse before and after age 18, and abuse perpetrated by a non-stranger showed the strongest effects on internalizing and externalizing disorders. Findings from all analyses generally showed that experiences of abuse were not significantly associated to substance use disorder. But, internalizing and externalizing disorders were significantly related with substance use disorder and vice versa.

Attention to abuse experiences early on in the criminal justice process may lead to a more preventative approach to people exposed to violence. One result is greater collaboration with other systems. These findings suggest that abuse trauma and mental health experiences may be potential responsivity factors that, if addressed, could improve success following programming or reentry into the community. The results also show that consideration of perpetrator type and abuse timing matters when providing an intervention for jailed persons who were victims of abuse. Attempts to address all of these factors – experiences of abuse trauma, unique aspects of those experiences (abuse timing and who perpetrated the abuse), and mental illness – can facilitate development of evidence-based practices in addition to promoting public safety and reducing costs associated with jails.

¹⁸ Cabeldue et al. (2019); Charak et al. (2019); Duron et al. (2021).

¹⁹ Cain et al. (2016); Meade & Steiner (2013).

APPENDIX A: METHODOLOGY

We conducted multiple logistic regressions to examine the relationship between abuse trauma and the outcomes. While similar tests have been conducted with other correctional populations, tests from this study contribute to the knowledge base because they use a jail population (versus a youth or prison population), distinguish between internalizing and externalizing disorders (versus combining all psychological disorders), and test disparities of these effects between men and women (for the monovictimization and polyvictimization models but not the abuse timing and perpetrator type models due to low frequency counts).

The first six regressions examine internalizing disorders for men and women separately. We created three models for each sex, and the first model includes experiences of only physical abuse (plus controls), the second involves experiences of only sexual abuse (plus controls), and the third incorporates polyvictimization (plus controls). The same process was then done but with externalizing disorders as the outcome. For the internalizing and externalizing disorder models, certain covariates were not included – PTSD and acute mental health problems – due to conceptual overlap between these measures and the mental health outcomes. Substance use disorder was included in the internalizing and externalizing models because the relationship between abuse trauma, mental illness, and substance use disorder is unclear. Mental illness may contribute to substance use/disorder or vice versa. The next six regressions included substance use disorder as an outcome. Unlike the internalizing and externalizing disorder models, mental health measures (internalizing, externalizing, PTSD, and acute) were kept because certain mental health symptoms can contribute to substance use disorder. These sex-specific analyses resulted in 18 logistic regressions. Further, we conducted a z-test for equality of regression coefficients²⁰ to assess whether there was a significant difference in the strength of the abuse measures between men and women. A z-score with an absolute value greater than 1.96 indicates a significant result.

We did not address sex-specific differences for the abuse timing and perpetrator type analyses due to a low prevalence of victimization broken out by abuse timing and perpetrator type for men and women. We tested for significant differences between men and women on the abuse timing and perpetrator type measures via chi-square tests. Men and women did not differ significantly on these abuse perpetrator type or abuse timing measures. Therefore, we examined a pooled population of jailed men and women. For the internalizing, externalizing, and substance use disorder outcomes, we performed four binary logistic models to assess the effects of timing and perpetrator, each layered by physical, sexual, and polyvictimization types. This set of analysis resulted in a total of 12 models.

²⁰ Paternoster et al. (1998).

APPENDIX B: TABLES

Table B1. Descriptive Statistics: Total and Sex-Specific Groups

<i>Item</i>	Total Sample	Women	Men	χ^2 (df)
	%	%	%	
No abuse	72.3	72.0	72.8	0.28(1)
Only physical abuse	17.5	17.9	17.1	0.40(1)
Only sexual abuse	3.2	4.0	2.9	2.53(1)
Polyvictimization	10.0	9.3	10.1	0.58(1)
Abuse perpetrator (for respondents reporting abuse)				
Physical abuse by a stranger	9.7	--	--	--
Physical abuse by a non-stranger	90.3	--	--	--
Sexual abuse by a stranger	15.1	--	--	--
Sexual abuse by a non-stranger	84.9	--	--	--
Polyvictimization abuse by a stranger	10.4	--	--	--
Polyvictimization by a non-stranger	89.6	--	--	--
When abused (for respondents reporting abuse)				
Physical abuse before 18yrs old	47.1	--	--	--
Physical abuse after 18yrs old	33.5	--	--	--
Physical abuse before and after 18yrs old	19.4	--	--	--
Sexual abuse before 18yrs old	69.8	--	--	--
Sexual abuse after 18yrs old	17.9	--	--	--
Sexual abuse before and after 18yrs old	12.3	--	--	--
Polyvictimization before 18yrs old	50.1	--	--	--
Polyvictimization after 18yrs old	31.4	--	--	--
Polyvictimization before and after 18yrs old	18.4	--	--	--
High internalizing SMIs	43.6	43.8	43.4	0.05(1)
High externalizing SMIs	19.4	18.3	19.8	1.12(1)
SUD	28.5	28.0	28.7	0.19(1)
Controls				
Age				37.05(2)***
>35	35.9	29.1	38.9	
26-35	33.8	36.8	32.6	
<26	30.3	34.2	28.5	
Male	73.0	--	--	--
Racial minority	43.5	43.6	43.8	0.03(1)
High school or more	80.9	81.7	80.6	0.72(1)
Unemployed	41.9	44.7	40.9	5.39(1)*
Homeless	10.7	9.7	11.0	1.47(1)
Single	69.9	72.3	68.9	4.84(1)*
TBI	37.9	35.1	39.0	5.61(1)*
PTSD	27.1	25.2	27.8	2.96(1)
Acute MHPs	34.0	36.8	32.8	6.14(1)*
Acute PHPs	22.2	20.9	22.9	2.04(1)
<i>N</i>	4,713	1,235	3,334	

Note: Differences between men and women regarding abuse perpetrator type and timing were not studied and are not reported here due to low frequency counts for both groups.



Table B2. Effect of Mono-Victimization vs. Polyvictimization on Internalizing Disorders: Sex-Specific Analyses

Item	Women						Men						z-test
	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	
H(x) physical abuse only	0.72(.18)	2.04***	--	--	--	--	.77(.11)	2.15***	--	--	--	--	-0.23
H(x) sexual abuse only	--	--	1.59(.42)	4.88***	--	--	--	--	0.53(.27)	1.70*	--	--	2.13***
Both (Polyvictimization)	--	--	--	--	1.17(.26)	3.22***	--	--	--	--	1.54(.16)	4.66***	-1.23
Substance use disorder	1.09(.16)	2.98***	1.06(.18)	2.87***	1.08(.15)	2.94***	1.05(.10)	2.85***	1.08(.11)	2.95***	1.07(.09)	2.93***	
Controls													
Age (<26 as ref.)													
>35	-0.63(.19)	0.53**	-0.62(.21)	0.54**	-0.48(.18)	0.62**	-1.71(.11)	0.84	-0.15(.12)	0.86	-0.23(.10)	0.80*	
26-35	-0.19(.17)	0.83	-0.15(.18)	0.86	-0.11(.16)	0.89	0.17(.11)	1.19	0.24(.12)	1.27*	0.16(.10)	1.17	
Racial minority	-0.14(.14)	0.87	-0.07(.16)	0.93	-0.12(.13)	0.89	-0.24(.09)	0.79**	-0.29(.10)	0.75**	-0.26(.08)	0.77*	
High school or more	-0.04(.18)	0.96	-0.10(.20)	0.91	-0.08(.17)	0.92	-0.21(.11)	0.81*	-0.29(.11)	0.75*	-0.17(.10)	0.85	
Unemployed	0.07(.14)	1.07	0.06(.15)	1.07	-0.04(.13)	0.97	0.01(.09)	1.01	0.01(.10)	1.01	0.04(.08)	1.04	
Homeless	0.73(.26)	2.08**	0.86(.30)	2.37**	0.65(.24)	1.91**	0.68(.14)	1.97***	0.72(.16)	2.06***	0.70(.13)	2.01***	
Single	0.32(.16)	1.37*	0.37(.18)	1.45*	0.28(.15)	1.32	0.13(.09)	1.13	0.08(.10)	1.08	0.08(.09)	1.08	
TBI	0.64(.15)	1.90***	0.63(.17)	1.87***	0.71(.14)	2.03***	0.44(.09)	1.56***	0.46(.10)	1.58***	0.52(.08)	1.68***	
Acute PHPs	0.87(.19)	2.38***	0.79(.22)	2.21***	0.90(.17)	2.46***	0.86(.11)	2.35***	0.94(.12)	2.55***	0.87(.10)	2.38***	
Constant	-1.23(.25)	0.29***	-1.25(.27)	0.29***	-1.04(.23)	0.35***	-1.11(.15)	0.33***	-1.06(.16)	0.35***	-0.99(.14)	0.37***	
<i>N</i>	1,031		881		1,176		2,767		2,364		3,155		

Note: p <.001***, p <.01**, p <.05*.



Table B3. Effect of Mono-Victimization vs. Polyvictimization on Externalizing Disorders: Sex-Specific Analyses

Item	Women						Men						z-test
	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	
H(x) physical abuse only	0.54(.21)	1.72**	--	--	--	--	0.48(.13)	1.62***	--	--	--	--	0.25
H(x) sexual abuse only	--	--	0.82(.41)	2.27*	--	--	--	--	-0.39(.36)	0.68	--	--	2.21***
Polyvictimization	--	--	--	--	0.15(.26)	1.16	--	--	--	--	0.51(.14)	1.67***	-1.24
Substance use disorder	1.00(.19)	2.72***	0.97(.21)	2.63***	0.96(.17)	2.62***	1.13(.11)	3.11***	1.295(.12)	3.65***	1.20(.10)	3.31***	
Controls													
Age (<26 as ref.)													
>35	-0.44(.24)	0.64	-0.43(.26)	0.65	-0.45(.22)	0.64*	-0.40(.13)	0.67**	-0.37(.15)	0.69*	-0.44(.12)	0.65***	
26-35	-0.22(.21)	0.80	-0.21(.23)	0.81	-0.09(.19)	0.91	-0.20(.13)	0.82	-0.21(.15)	0.81	-0.19(.12)	0.83	
Racial minority	-0.35(.19)	0.71	-0.28(.21)	0.76	-0.40(.17)	0.67*	-0.25(.11)	0.78*	-0.35(.13)	0.71**	-0.20(.10)	0.82*	
High school or more	-0.19(.22)	0.83	-0.36(.24)	0.70	-0.26(.20)	0.77	-0.36(.13)	0.70**	-0.30(.14)	0.74*	-0.30(.12)	0.74**	
Unemployed	-0.01(.18)	0.99	0.03(.20)	1.03	-0.09(.16)	0.92	0.01(.11)	1.01	0.00(.12)	1.00	0.06(.10)	1.06	
Homeless	0.98(.26)	2.66***	0.81(.32)	2.26*	0.93(.23)	2.52***	0.35(.16)	1.42*	0.32(.19)	1.38	0.33(.14)	1.39*	
Single	-0.03(.20)	0.97	0.01(.23)	1.01	-0.02(.18)	0.98	0.09(.12)	1.09	0.20(.13)	1.22	0.08(.11)	1.08	
TBI	0.56(.19)	1.75**	0.55(.21)	1.74**	0.51(.17)	1.67**	0.28(.11)	1.32*	0.41(.12)	1.50**	0.25(.10)	1.28*	
Acute PHPs	0.16(.23)	1.18	0.37(.26)	1.44	0.32(.20)	1.38	0.58(.12)	1.78***	0.51(.14)	1.66***	0.49(.11)	1.64***	
Constant	-1.89(.30)	0.15***	-1.85(.34)	0.16***	-1.67(.28)	0.19***	-1.77(.18)	0.17***	-1.95(.20)	0.14***	-1.73(.16)	0.18***	
N	1,031		881		1,176		2,767		2,364		3,155		

Note: p <.001***, p <.01**, p <.05*.



Table B4. Effect of Mono-Victimization vs. Polyvictimization on SUD: Sex-Specific Analyses

Item	Women						Men						z-test
	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	
H(x) physical abuse only	0.04(.20)	1.04	--	--	--	--	0.11(.12)	1.11	--	--	--	--	-0.28
H(x) sexual abuse only	--	--	0.43(.38)	1.53	--	--	--	--	0.12(.29)	1.13	--	--	0.64
Both (Polyvictimization)	--	--	--	--	-0.15(.24)	0.86	--	--	--	--	0.31(.14)	1.37*	-1.70
Internalizing disorders	0.83(.18)	2.30***	0.77(.20)	2.16***	0.79(.17)	2.20***	0.63(.11)	1.87***	0.59(.13)	1.80***	0.61(.10)	1.84***	
Externalizing disorders	0.69(.20)	2.00***	0.66(.22)	1.94**	0.64(.18)	1.89***	0.77(.12)	2.15***	0.90(.13)	2.45***	0.82(.11)	2.26***	
Controls													
Age (<26 as ref.)													
>35	0.69(.21)	2.00**	0.70(.23)	2.00**	0.56(.19)	1.75**	0.24(.12)	1.27	0.34(.14)	1.41*	0.25(.11)	1.29*	
26-35	0.41(.19)	1.51*	0.45(.21)	1.57*	0.32(.18)	1.38	0.30(.12)	1.35*	0.34(.14)	1.41*	0.24(.11)	1.27*	
Racial minority	-0.68(.16)	0.51***	-0.79(.18)	0.45***	-0.73(.15)	0.48***	-0.77(.10)	0.46***	-0.82(.11)	0.44***	-0.71(.09)	0.49***	
High school or more	0.13(.20)	1.14	0.04(.23)	1.04	0.13(.19)	1.14	0.04(.12)	1.05	0.06(.13)	1.06	0.08(.11)	1.08	
Unemployed	0.41(.16)	1.51**	0.37(.17)	1.44*	0.46(.15)	1.58**	0.31(.10)	1.37**	0.30(.11)	1.35**	0.30(.09)	1.35**	
Homeless	0.33(.26)	1.40	0.14(.31)	1.15	0.57(.23)	1.77*	0.22(.15)	1.25	0.23(.18)	1.26	0.22(.13)	1.24	
Single	0.01(.18)	1.01	0.05(.20)	1.05	0.05(.16)	1.06	-0.03(.10)	0.97	-0.10(.11)	0.90	0.07(.10)	1.08	
TBI	0.08(.17)	1.09	0.14(.19)	1.15	0.20(.15)	1.22	0.23(.10)	1.26*	0.11(.11)	1.11	0.22(.09)	1.24*	
PTSD	0.36(.20)	1.44	0.48(.13)	1.61*	0.48(.18)	1.61*	0.60(.12)	1.82***	0.70(.14)	2.01***	0.66(.11)	1.94***	
Acute MHPs	0.07(.16)	1.07	-0.01(.18)	0.99	0.05(.15)	1.05	-0.09(.10)	0.92	-0.06(.11)	0.94	-0.05(.09)	0.95	
Acute PHPs	0.26(.20)	1.29	0.49(.23)	1.63*	0.19(.18)	1.21	0.20(.12)	1.23	0.16(.13)	1.18	0.14(.10)	1.15	
Constant	-2.21(.29)	0.11***	-2.13(.32)	0.12***	-2.19(.27)	0.11***	-1.84(.17)	0.16***	-1.83(.19)	0.16***	-1.93(.16)	0.15***	
N	1,030		880		1,175		2,766		2,363		3,154		

Note: p <.001***, p <.01**, p <.05*.



Table B5. Effect of Abuse Perpetrator Type on Outcomes

Item	Internalizing Disorder				Externalizing Disorder				Substance Use Disorder			
	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR
Physical abuse – Non-stranger	0.58(.10)	1.78***	0.73(.10)	2.08***	0.42(.11)	1.52***	0.50(.11)	1.66***	0.01(.10)	1.01	0.04(.10)	1.05
Sexual abuse – Non-stranger	0.62(.24)	1.86**	0.77(.23)	2.16**	-0.05(.28)	0.95	0.04(.28)	1.04	0.14(.24)	1.15	0.17(.24)	1.18
Physical abuse – Stranger	0.17(.29)	1.19	0.34(.29)	1.40	0.50(.30)	1.65	0.58(.30)	1.79	0.56(.29)	1.74	0.59(.29)	1.80*
Sexual abuse – Stranger	0.79(.56)	2.20	0.92(.56)	2.51	0.36(.62)	1.44	0.44(.62)	1.55	0.56(.55)	1.75	0.59(.55)	1.80
Polyvictimization – Non-stranger	--	--	1.53(.15)	4.62***	--	--	0.54(.14)	1.72***	--	--	0.16(.13)	1.17
Polyvictimization – Stranger	--	--	0.79(.64)	2.21	--	--	0.07(.63)	1.07	--	--	0.96(.61)	2.61
Substance use disorder	1.11(.08)	3.02***	1.07(.08)	2.92***	1.14(.08)	3.13***	1.12(.08)	3.07***	--	--	--	--
Internalizing disorder	--	--	--	--	--	--	--	--	0.69(.09)	1.99***	0.68(.09)	1.97***
Externalizing disorder	--	--	--	--	--	--	--	--	0.77(.09)	2.15***	0.77(.09)	2.15***
Controls												
Age (<26 as ref.)												
>35	-0.25(.09)	0.78**	-0.29(.09)	0.75**	-0.42(.10)	0.66***	-0.43(.10)	0.65***	0.32(.10)	1.38**	0.31(.10)	1.36**
26-35	0.10(.08)	1.10	0.07(.09)	1.07	-0.17(.10)	0.85	-0.18(.10)	0.83	0.27(.10)	1.31**	0.26(.10)	1.30**
Male	-0.04(.08)	0.96	-0.05(.08)	0.95	0.10(.09)	1.10	0.09(.09)	1.10	-0.01(.08)	1.00	-0.01(.08)	1.00
Racial minority	-0.22(.07)	0.81**	-0.18(.07)	0.84*	-0.25(.09)	0.78**	-0.23(.09)	0.79**	-0.71(.08)	0.49***	-0.71(.08)	0.49***
High school or more	-0.15(.09)	0.86	-0.16(.09)	0.85	-0.29(.10)	0.75**	-0.30(.10)	0.74**	0.08(.10)	1.08	0.08(.10)	1.08
Unemployed	0.03(.07)	1.03	0.00(.07)	1.00	0.03(.08)	1.03	0.02(.08)	1.02	0.34(.07)	1.41***	0.34(.07)	1.40***
Homeless	0.70(.11)	2.00***	0.65(.12)	1.92***	0.50(.12)	1.64***	0.46(.12)	1.58***	0.30(.11)	1.34**	0.28(.11)	1.32*
Single	0.12(.07)	1.13	0.13(.08)	1.14	0.08(.09)	1.09	0.08(.09)	1.08	0.06(.08)	1.06	0.06(.08)	1.06
TBI	0.60(.07)	1.81***	0.54(.07)	1.71***	0.31(.08)	1.36***	0.28(.09)	1.32**	0.20(.08)	1.22*	0.19(.08)	1.21*
PTSD	--	--	--	--	--	--	--	--	0.58(.09)	1.79***	0.57(.09)	1.77***
Acute MHPs	--	--	--	--	--	--	--	--	-0.02(.08)	0.98	-0.02(.08)	0.98
Acute PHPs	0.92(.08)	2.52***	0.85(.09)	2.35***	0.47(.09)	1.60***	0.43(.09)	1.54***	0.18(.09)	1.20*	0.17(.09)	1.19
Constant	-0.99(.13)	0.37***	-1.04(.13)	0.35***	-1.84(.16)	0.16***	-1.86(.16)	0.16***	-1.98(.15)	0.14***	-1.98(.15)	0.14***
N	4,395		4,395		4,395		4,395		4,393		4,393	

Note: p <.001***, p <.01**, p <.05*.

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Table B6. Effect of Abuse Timing on Outcomes

Item	Internalizing Disorder				Externalizing Disorder				Substance Use Disorder			
	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR	b(SE)	OR
Physical abuse – Before 18yrs old	0.55(.13)	1.73***	0.66(.13)	1.94***	0.59(.14)	1.80***	0.63(.14)	1.88***	0.09(.14)	1.09	0.14(.14)	1.16
Sexual abuse – Before 18yrs old	0.45(.26)	1.56	0.55(.26)	1.73*	-0.15(.32)	0.86	-0.11(.32)	0.89	0.26(.27)	1.30	0.31(.27)	1.36
Physical abuse – After 18yrs old	0.24(.15)	1.27	0.35(.15)	1.41*	-0.09(.19)	0.91	-0.06(.19)	0.95	0.09(.16)	1.10	0.14(.16)	1.15
Sexual abuse – After 18yrs old	1.28(.53)	3.59*	1.37(.53)	3.94*	-0.29(.68)	0.75	-0.25(.68)	0.78	-0.44(.56)	0.65	-0.38(.56)	0.69
Physical abuse – Before & after 18yrs old	1.13(.21)	3.08***	1.23(.21)	3.43***	0.76(.20)	2.14***	0.80(.20)	2.23***	-0.15(.20)	0.87	-0.08(.20)	0.93
Sexual abuse – Before & after 18yrs old	0.91(.63)	2.47	1.02(.62)	2.78	0.94(.57)	2.55	0.97(.57)	2.64	0.64(.58)	1.89	0.69(.58)	2.00
Polyvictimization – Before 18yrs old	--	--	0.95(.21)	2.58***	--	--	0.72(.20)	2.06***	--	--	0.34(.20)	1.40
Polyvictimization – After 18yrs old	--	--	1.71(.39)	5.53***	--	--	-0.14(.34)	0.87	--	--	0.46(.30)	1.59
Polyvictimization – Before & after 18yrs old	--	--	1.92(.34)	6.83***	--	--	0.04(.26)	1.04	--	--	0.53(.23)	1.70*
Substance use disorder	1.11(.08)	3.03***	1.07(.08)	2.90***	1.14(.08)	3.13***	1.13(.08)	3.10***	--	--	--	--
Internalizing disorder	--	--	--	--	--	--	--	--	0.69(.09)	1.99***	0.67(.09)	1.95***
Externalizing disorder	--	--	--	--	--	--	--	--	0.77(.09)	2.15***	0.77(.09)	2.17***
Controls												
Age (<26 as ref.)												
>35	-0.25(.09)	0.78**	-0.29(.09)	0.75**	-0.41(.10)	0.67***	-0.41(.10)	0.66***	0.32(.10)	1.37**	0.30(.10)	1.35**
26-35	0.10(.08)	1.11	0.08(.09)	1.08	-0.16(.10)	0.86	-0.15(.10)	0.86	0.26(.10)	1.30**	0.25(.10)	1.29**
Male	-0.04(.08)	0.96	-0.04(.08)	0.96	0.10(.09)	1.10	0.10(.09)	1.10	-0.00(.08)	1.00	-0.00(.08)	1.00
Racial minority	-0.21(.07)	0.81**	-0.19(.07)	0.83**	-0.24(.09)	0.79**	-0.23(.09)	0.79**	-0.71(.08)	0.49***	-0.70(.08)	0.50***
High school or more	-0.14(.09)	0.87	-0.16(.09)	0.85	-0.29(.10)	0.75**	-0.28(.10)	0.76**	0.08(.10)	1.08	0.07(.10)	1.07
Unemployed	0.03(.07)	1.03	-0.00(.07)	1.00	0.04(.08)	1.04	0.04(.08)	1.04	0.34(.07)	1.41***	0.33(.07)	1.39***
Homeless	0.67(.11)	1.95***	0.61(.12)	1.84***	0.47(.12)	1.60***	0.46(.12)	1.59***	0.31(.11)	1.36**	0.28(.11)	1.33*
Single	0.12(.07)	1.13	0.12(.07)	1.13	0.08(.09)	1.08	0.09(.09)	1.10	0.05(.08)	1.05	0.05(.08)	1.05
TBI	0.58(.07)	1.79***	0.53(.07)	1.70***	0.30(.08)	1.34***	0.28(.09)	1.32**	0.20(.08)	1.22**	0.18(.08)	1.20*
PTSD	--	--	--	--	--	--	--	--	0.59(.09)	1.80***	0.56(.09)	1.75***
Acute MHPS	--	--	--	--	--	--	--	--	-0.01(.08)	0.99	-0.01(.08)	0.99
Acute PHPs	0.93(.08)	2.53***	0.89(.09)	2.43***	0.47(.09)	1.60***	0.45(.09)	1.57***	0.17(.09)	1.19	0.16(.09)	1.17
Constant	-1.00(.13)	0.37***	-1.00(.13)	0.37***	-1.85(.56)	0.16***	-1.89(.16)	0.15***	-1.98(.15)	0.14***	-1.97(.15)	1.40***
N	4,395		4,395		4,395		4,395		4,393		4,393	

Note: p <.001***, p <.01**, p <.05*.



APPENDIX C: REFERENCES

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