Published in final edited form as:

Crim Behav Ment Health. 2020 October ; 30(5): 221–227. doi:10.1002/cbm.2162.

The nuanced relationship between adverse childhood experiences and recidivism risk scores among women leaving jail: A preliminary exploration

Vanessa Schick¹, Isabel Roth², Andrea Link¹, Alycia Welch³

¹Management, Policy and Community Health, School of Public Health, The University of Texas Health Science Center at Houston, Houston, Texas

²School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

³Texas Institute for Excellence in Mental Health at the Steve Hicks School of Social Work, The University of Texas at Austin, Austin, Texas

Abstract

Background: Women with histories of childhood trauma tend to score higher on recidivism risk/needs assessment tools, such as the *Level of Service Inventory-Revised: Screening Version* (LSI-R: SV). These may affect their chance of leaving custody, but risk scores may be inflated by reliance on additional items which reflect other fixed childhood events.

Aims: We hypothesised that adverse childhood experiences (ACEs) would be related to immutable risk measures according to the LSI-R: SV, such as juvenile arrest history, rather than more mutable factors, such as criminal attitudes.

Methods: Two interviewer-administered questionnaires—one about ACEs and one about criminogenic risk and needs—were given to a cohort of women just after release from jail. Phi coefficients were used to test for associations between ACE scale scores and scores on the risk tool—the LSI-R: SV.

Results: ACE scale items were related to static risk item scores from the LSI-R: SV, but not to any of the dynamic risk items except psychological health.

Conclusions: Risk reduction is an important task in the criminal justice system, for which systematic risk assessment is an integral part of decision making. Self-reported experience of psychological health apart, only fixed historical variables were related to estimated recidivism risk. There was no relationship between the mutable constructs of attitudes towards crime or employment status and estimated risk. This raises the question of whether the risk of recidivism is increased when there is a background of childhood trauma. Implications for using risk reduction tools to inform the need for trauma-informed correctional care are discussed. Longitudinal research assessing recidivism is needed to test this further.

Correspondence: Vanessa Schick, Management, Policy and Community Health, School of Public Health, The University of Texas Health Science Center at Houston, 1200 Pressler St, Rm E-917, Houston, TX 77030, USA. vanessa.schick@uth.tmc.edu.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

1 | BACKGROUND

Trauma experienced during developmental phases can be detrimental, with potential for lifelong psychological repercussions (Sacks, McKendrick, & Banks, 2008; Zlotnick, Tam, & Robertson, 2004). It has been shown that women with histories of childhood trauma are more likely to engage in criminalised behaviour (Grella et al., 2005; Roos et al., 2016; Sangoi, 2013) and to have higher scores on risk of crime/criminogenic needs assessment tools (Moore, 2016). Women who have been incarcerated, particularly those who have experienced homelessness, are more likely to have reported experiences of trauma than their male counterparts or other women without experiences in the justice system and housing instability (Messina & Grella, 2006). This includes a history of increased exposure to adverse childhood experiences (ACEs; Center for Disease Control and Prevention [CDC], 2016), leading to a disproportionate risk of substance use and subsequent mental health challenges (Grella, Stein, & Greenwell, 2005, Green et al, 2016).

Risk and criminogenic needs assessment tools are used in the criminal justice system in the United States of America to make predictions about recidivism, with higher scores potentially resulting in longer sentencing decisions (Monahan & Skeem, 2014). The Level of Service Inventory-Revised (LSI-R) is one of the more commonly used instruments of this type (Hannah-Moffat, 2013, Campbell et al, 2009). Despite its predictive utility, however, critics of the tool suggest that risk scores could have potential for bias (Starr, 2014). Several of the items on the LSI-R assess experiences which are closely related in time and, since assessing historical events, can not be changed over time. These include, but are not confined to, traumatic childhood experiences. Other fixed events may not be a direct result of traumatic experiences but may be correlated with adverse social and environmental factors, including an early onset of criminalised behaviour. Where scores on the scale are merely added to give a risk score, such calculations may apparently raise risk while, in fact, relating to a single troubled period in the individual's life under which the individual had little control and concealing potential strengths in more mutable factors, like criminal attitudes.

Our aim, therefore, was to test the extent to which ACEs relate to other fixed events rather than more mutable psychological factors. We hypothesised that ACEs would be related to other immutable historical factors that occurred during childhood and early adolescence but unrelated to behaviours or attitudes concurrent with the time of arrest/release and potentially relevant to it, such as criminal attitudes.

2 | METHODS

The University of Texas Health Science Center at Houston Institutional Review Board approved the study.

We explored the relationship between specific items on a risk of harm to others prediction scale—the LSI-R screening version (LSI-R: SV; Walters, 2011) and a measure of ACEs (Centers for Disease Control and Prevention (CDC), 2016). The latter scale measures adverse life events before the age of 18, including abuse and household challenges, and is

predictive of trauma and risk for depression, anxiety, hallucinations, substance use (Anda et al., 2006) and early death (Brown et al., 2009). In the current study, we modified the way in which one of the LSI-R:SV items was operationalised to place emphasis on immutable versus potentially malleable factors.

2.1 | The sample

Women consecutively released from a state or county jail for women serving sentences of 2 years' imprisonment or less (total capacity over 2,000) were approached on the day of their release. For several months, researchers waited to meet women at the location to which all released women went on their exit (e.g., the local bus stop). The researchers briefly explained the research and then screened all consenting women for nature of accommodation. Those with unstable housing or indicating an interest in transitional housing were invited to participate in the study, unstable housing being an inclusion criterion that was used to identify those most vulnerable to early trauma and adverse outcomes upon release.

2.2 | Measures

The scales were interviewer-administered by one of the research team members who had no previous relationship with the participants. The interviewers were instructed to read the questions verbatim in order to maintain the integrity of the pre-validated scales. They were, however, allowed to clarify if any participant found terms or phrases unclear.

The *Adverse Childhood Events Scale* (ACEs) was adopted from the *Behavioural Risk Factor Surveillance System* (BRFSS), with individual responses coded dichotomously. The 11-item index is widely used (Cronbach's $\alpha = .78$; Ford et al., 2014).

The Level of Service Inventory-Revised: Screening Version (LSI-R: SV) is an eight-item measure designed to assess whether the full LSI-R should be administered but is also used as a stand-alone tool to predict recidivism. LSI-R:SV items are scored dichotomously with higher scores used as an indicator that recidivism is more likely than with lower scores (Lowenkamp, Lovins, & Latessa, 2009). Items cover a variety of topics including criminal history, substance use, and attitudes (see Table 1). The LSI-R:SV item assessing current relationships was administered according to manual recommendations but scored separately for different relationship clusters that varied in their potential mutability: (a) Family and Friends (least mutable), (b) Close and Distant Friends, (c) Close friends only (most mutable), assuming that one has less choice over their family members than their close friends.

2.3 | Analytic plan

The relationship between individual items on the ACE and LSI-R: SV were assessed with Phi Coefficient with the strength of the association ranging from 0 to 1. Since there were multiple comparisons with related outcomes, we used Benjamini–Hochberg's false discovery rate in order to reduce the likelihood of elevated Type I error (false positives).

3 | RESULTS

3.1 | General description of the sample

During the time of data collection, 199 women were approached and invited to participate in the study. Of those, 20 declined to participate (primary reason for declining included logistical conflicts- e.g., catching a bus) and 100 did not meet the eligibility criteria. In total, 79 women were recruited. They were aged between 24 and 79 years; two-thirds of the participants were in their 30s (18, 23%) or 40s (28, 35%). They identified as White (46, 58%), Black (23, 29%) and/or Hispanic (19, 24%); seven (9%) chose more than one of these groups. Twenty-six (33%) of the participants did not complete a high school education, 20 (25%) gained a high school diploma or GED and 23 (29%) attended some college or reported an associate's degree with missing education data for 10 (13%) of the participants. When asked about prior adult convictions, 62 (78%) had two or more convictions, with an average of 5.84 ($SD = 6.23$) previous convictions.

There was a significant correlation between total ACE and LSI-R:SV scores ($r = .32$, $p < .01$). At an item level, only the individual LSI-R: SV items measuring psychological health, juvenile arrest history and parental relationships were related to individual ACE items (see Table 1). There was an association between LSI-R:SV scores and ACE items when operationalised to include family and friends but not when operationalised to only focus on close friends. LSI-R:SV malleable construct items (LSI-R:SV Items 3, 4c, 5, 6 and 8), except for psychological health, were not significantly related to individual ACE items.

4 | DISCUSSION

Consistent with previous literature, we found a relationship between the ACE and LSI-R:SV scores in this study. Our hypotheses were sustained, however, in that, self-reported experience of psychological health apart, only fixed historical variables used to predict risk of recidivism, such as juvenile incarceration and parental relationship, accounted for this. There was no relationship between the mutable constructs of attitudes towards crime or employment status. The item assessing current criminal associations was differentially related to the LSI-R:SV based on the way in which this item was operationalised. This item was related to individual ACE items when family members and distant friends were included in the definition. Individuals are unable to change or choose their family. Distant friends—by the nature of the definition of the word ‘distant’—indicates that the relationship was one that occurred in the past. In contrast, when constrained to close friends—a potential indicator of a more recent relationship—the item assessing criminal associates was unrelated to any individual ACE items. Psychological health, while not a direct assessment of historical trauma, could be a measure of the impact of experiencing trauma.

Still, the relationship between the factors which are less dynamic on the LSI-R: SV and ACE suggests that those with early experiences of trauma may be more likely to be flagged as higher risk than those without trauma. Instead of focusing on static factors which may assess previous traumatic experiences, modifying the screener to better emphasise dynamic factors may enhance variability in the scores of individuals across time.

Alternatively, instead of modifying the instrument, there may be alternative uses for the tool. Research has consistently shown that ACE scores are related to justice involvement due to differences in personality development, mental health and substance use (Perez, Jennings, & Baglivio, 2018). Characterising ACE scores as a risk factor as opposed to a health need alters the recidivism reduction response. If instead conceptualised as a need, responses to learning of ACE scores could include adopting a post-traumatic dysregulation (Ford & Blaustein, 2013) or trauma-informed correctional care framework/model which has been shown to increase the effectiveness of interventions for individuals who have experienced trauma (Miller & Najavits, 2012). Thus, the implication may not be to modify the widely used and validated tool but instead to think about the way in which the information is used to inform decision making.

4.1 | Limitations

These findings should be regarded as preliminary. Generalisability is limited by the small sample size, but there was little selection bias in the sample in that the research team approached all women at the jail release point over a period of several months. Findings were also limited by the fact that our measurement of risk predictors was confined to the screening version of one risk/needs assessment tool. Finally, the tool was administered by public health professionals in the community as opposed to criminal justice professionals in a justice setting. Researchers may wish to investigate other tools in diverse settings. Still further clarity could emerge if measurement of the impact of adverse events were also included. Some work testing associations between adverse events and later violence or offending has found a difference between groups according to whether they develop PTSD or not. Perhaps the greatest limitation, however, is that we did not go on to assess relationships between the tools and actual recidivism. Given the suggestion of differences in association between adverse event ratings and risk predictions, it is important to understand whether using such measures in combination would allow for the identification of subgroups of people with particular needs for risk reducing interventions.

ACKNOWLEDGEMENTS

Support for this paper was provided in part by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation. Isabel Roth's contribution to this manuscript was partially supported by a T32 Fellowship from the National Center for Complementary and Integrative Health (5T32AT00378-12). The authors are grateful to the many people who assisted with data collection. They also appreciate the assistance and collaboration of The Woman's Roots Reentry Initiative who extended the trust that they earned after working tirelessly to provide women upon release from jail with needed support and services. Finally, they would like to thank Angela House for their collaboration and support of the parent project.

REFERENCES

- Anda RF, Felitti VJ, Bremner JD, Walker JD, Whitfield CH, Perry BD, ... Giles WH (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174–186. [PubMed: 16311898]
- Brown DW, Anda RF, Tiemeier H, Felitti VJ, Edwards VJ, Croft JB, & Giles WH (2009). Adverse childhood experiences and the risk of premature mortality. *American Journal of Preventive Medicine*, 37(5), 389–396. 10.1016/j.amepre.2009.06.021 [PubMed: 19840693]

- Campbell MA, French S, & Gendreau P (2009). The prediction of violence in adult offenders: A meta-analytic comparison of instruments and methods of assessment. *Criminal Justice and Behavior*, 36(6), 567–590.
- Centers for Disease Control and Prevention (CDC). (2016). About behavioral risk factor surveillance system ACE data. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/ace_brfs.html
- Ford JD, & Blaustein ME (2013). Systemic self-regulation: A framework for trauma-informed services in residential juvenile justice programs. *Journal of Family Violence*, 28(7), 665–677.
- Ford DC, Merrick MT, Parks SE, Breiding MJ, Gilbert LK, Edwards VJ, ... Thompson WW (2014). Examination of the factorial structure of adverse childhood experiences and recommendations for three subscale scores. *Psychology of Violence*, 4(4), 432–444. [PubMed: 26430532]
- Grella CE, Stein JA, & Greenwell L (2005). Associations among childhood trauma, adolescent problem behaviors, and adverse adult outcomes in substance-abusing women offenders. *Psychology of Addictive Behaviors*, 19(1), 43. [PubMed: 15783277]
- Green BL, Dass-Brailsford P, Hurtado de Mendoza A, Mete M, Lynch SM, DeHart DD, & Belknap J (2016). Trauma experiences and mental health among incarcerated women. *Psychological trauma: theory, research, practice, and policy*, 8(4):455–463. 10.1037/tra0000113
- Hannah-Moffat K (2013). Actuarial sentencing: An “unsettled” proposition. *Justice Quarterly*, 30(2), 270–296.
- Lowenkamp CT, Lovins B, & Latessa EJ (2009). Validating the level of service inventory-revised and the level of service inventory: Screening version with a sample of probationers. *The Prison Journal*, 89(2), 192–204. 10.1177/0032885509334755
- Messina N, & Grella C (2006). Childhood trauma and women’s health outcomes in a California prison population. *American Journal of Public Health*, 96(10), 1842–1848. [PubMed: 17008581]
- Miller NA, & Najavits LM (2012). Creating trauma-informed correctional care: A balance of goals and environment. *European Journal of Psychotraumatology*, 3(1), 17246.
- Monahan J, & Skeem JL (2014). Risk redux: The resurgence of risk assessment in criminal sanctioning. *Federal Sentencing Reporter*, 26(3), 158–166. 10.1525/fsr.2014.26.3.158
- Moore MD (2016). Adverse childhood experiences and offender risk to re-offend in the United States: A quantitative examination. *International Journal of Criminal Justice Sciences*, 11(2), 148.
- Perez NM, Jennings WG, & Baglivio MT (2018). A path to serious, violent, chronic delinquency: The harmful aftermath of adverse childhood experiences. *Crime & Delinquency*, 64(1), 3–25.
- Roos LE, Afifi TO, Martin CG, Pietrzak RH, Tsai J, & Sareen J (2016). Linking typologies of childhood adversity to adult incarceration: Findings from a nationally representative sample. *American Journal of Orthopsychiatry*, 86(5), 584–593. 10.1037/ort0000144 [PubMed: 27078049]
- Sacks JY, McKendrick K, & Banks S (2008). The impact of early trauma and abuse on residential substance abuse treatment outcomes for women. *Journal of Substance Abuse Treatment*, 34(1), 90–100 doi:S0740–5472(07)00099–2 [pii]. [PubMed: 17574799]
- Sangoi LK (2013). Women and girls’ experiences before, during, and after incarceration: A narrative of gender-based violence, and an analysis of the criminal justice laws and policies that perpetuate this narrative. *UCLA Women’s Law Journal*, 20, 137.
- Starr SB (2014). Evidence-based sentencing and the scientific rationalization of discrimination. *Stanford Law Review*, 66(4), 803–872.
- Walters GD (2011). Predicting recidivism with the psychological inventory of criminal thinking styles and level of service inventory-revised: Screening version. *Law and Human Behavior*, 35(3), 211–220. [PubMed: 20464628]
- Zlotnick C, Tam T, & Robertson MJ (2004). Adverse childhood events, substance abuse, and measures of affiliation. *Addictive Behaviors*, 29(6), 1177–1181. 10.1016/j.addbeh.2004.01.005 [PubMed: 15236820]

TABLE 1

Associations between ACE and LSI-R: SV at the item level

Items on the LSI-R: SV										
Items on the ACE	1. (M) Convictions	2. Juvenile arrest	3. (M) Employment status	4A. Criminal associates~	4B. Criminal friends~	4C. (M) Close criminal friends~	5. (M) Substance use	6. (M) Psychological health	7. Parental relationship	8. (M) Criminal attitude
1. Live w/mental illness	0.16	0.05	-0.03	0.31**	0.17	0.11	0.10	0.21	0.23	0.04
2. Live w/alcohol use	0.19	0.11	-0.06	0.21	0.17	0.16	0.12	0.05	0.03	0.01
3. Live w/substance use	0.16	0.42****	0.06	0.33****	0.27*	0.20	0.03	0.10	0.02	0.05
4. Live w/jail	0.03	0.32****	0.09	0.13	0.04	0.10	0.06	-0.08	0.01	0.02
5. Parents divorced	-0.08	-0.13	0.15	0.07	-0.02	0.02	0.18	0.25	0.06	0.01
6. Adults violent towards each other	0.18	-0.08	0.02	0.30**	0.05	-0.08	0.19	0.07	0.11	0.08
7. Adults violent towards participant	0.12	0.10	-0.06	0.10	0.04	-0.07	0.04	0.30**	0.31**	0.04
8. Adults emotionally abusive towards participant	-0.01	-0.01	0.00	0.13	0.01	-0.15	0.14	0.23	0.26	0.15
9. Adults touch participant sexually	0.16	0.02	-0.25	0.33****	0.16	0.14	0.02	0.12	0.04	0.16
10. Adults made participant touch them sexually	0.13	0.05	-0.24	0.28*	0.11	0.14	0.15	0.18	0.04	0.05
11. Adults engage in intercourse with participant	0.05	-0.09	-0.18	0.22	0.12	0.04	0.00	0.13	0.07	0.03

Note: Item 4A asks about current criminal associates including all friends and family. Item 4B asks about only distant and close friends (no family). 4c asks about participant close friends only (no distant friends or family). (M) Indicate items hypothesised to be the most malleable.

Abbreviations: ACE, adverse childhood experience; LSI-R: SV, Level of Service Inventory-Revised: Screening Version.

* Significant p -value after controlling for false discovery rate.

**
 $p < .01$.

 $p < .005$.

 $p < .001$.