Abstract: Over 2 million adults are incarcerated in the United States. Although a number of risk factors have been identified, most studies do not account for timing, sequencing or accumulation. Here, 10 incarcerated men were interviewed about memories of school and produced life graphs. They experienced 5-15 factors, with the greatest number accruing between age 12 and 13. Participants reported a number of conditions commonly associated with complex trauma, such as social isolation and attention deficits. From these descriptions, a developmental cascade is proposed.

Keywords: School-to-prison pipeline, incarceration, developmental cascades.

Introduction

One in 100 American adults is incarcerated (Travis, Western & Redburn, 2014) at a cost of $80 billion per year (Schmitt, Warner & Gupta, 2010). Human costs include: poverty for families (Geller, Garfinkel, Cooper & Mincy, 2009); foster care and permanent separation for children of incarcerated parents (Arditti, 2005); and decreased educational attainment among young people in neighborhoods with high incarceration rates (Hagan & Foster, 2012). For a significant portion of incarcerated individuals, social exclusion is complete; in the United States, felony conviction results in disenfranchisement.

Incarceration has been associated with risk factors, “those characteristics, variables, or hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected at random from the general population, will develop a disorder” (Mrazek & Haggerty quoted in Arthur et al., 2002, p. 576). While the number of risk factors accumulated in childhood is a powerful predictor (Arthur et al., 2002), timing and sequencing is believed to be of critical importance (Teicher & Parigger, 2015). Nevertheless, little is known about the timing and sequencing of risk factors (Borowsky, Ireland & Resnick, 2002).
This study examined three categories of risk factors previously associated with incarceration: adverse childhood experiences (ACEs); school-related risk factors; and social and behavioral risk factors.

**Adverse childhood experiences (ACEs)**

ACEs occur in the first 18 years and are defined as: physical, sexual and emotional abuse; neglect; substance abusing or mentally ill parent; witnessing domestic violence; parental divorce or separation; and incarcerated family member (Felitti et al., 1998). ACEs may negatively impact memory, self-concept, information processing, self-regulation and behavior (Cole et al., 2005). Further, ACEs are associated with intermediate outcomes ultimately associated with incarceration; for example, 56% of illicit drug use is attributable to ACEs (Dube et al., 2003) and half of adults are incarcerated for drug crimes (Alexander, 2012).

**School Related Risk**

School-related risk factors occur at school and are associated with academic difficulties, dropping out and incarceration (Wald & Losen, 2003). Risks include: referral to special education (Wald & Losen, 2003), grade retention (Jimerson, Anderson & Whipple, 2002), suspension (Baker et al., 2001) and truancy (George, 2011). The majority of incarcerated adults have no high school credential upon first entry to the prison system (Greenberg, Dunleavy & Kutner, 2008).

**Social and Behavioral Risk**

Social and behavioral risks associated with entry to the juvenile justice system; three-fourths of incarcerated adults have a juvenile record (Aos et al., 2004). These include: alcohol, tobacco and other drug (ATOD) use (Hawkins, Catalano & Miller, 1992) and fathering a child prior to age 19 (Allen, Philliber, Herrling & Kuperminc, 1997).

**Conceptual Model & Research Questions**

Based on the documented relationships among ACEs, school-related risk and social and behavioral risk factors I arrived at the following conceptual model and research questions (RQ):
RQ1: What do ten currently incarcerated men report about the sequence, timing and accumulation of: a) ACEs, b) school risk factors and c) social and behavioral risk factors?

RQ 2: How does timing, sequence and accumulation of risk reported illuminate our understanding of school-to-prison phenomena?

Study Design and Analytic Approach

Research Context

This interview study was conducted inside Rolling River Correctional Center (RRCC), a minimum security prison in the western United States, where all detainees are men within a few years of release to the community. Placed here to prepare for reentry through educational and vocational programming, most have earned their spot through good behavior; a few come here directly due to the shortness of their sentence.

Sample Selection

Participation was determined by purposeful selection (Maxwell, 2013). All offenders at RRCC as of July 1, 2014 were eligible to participate provided that they attended American schools for at least three years, were scheduled for release after the conclusion of the interview period, were sufficiently fluent in English to participate without a translator, and were first committed to this state’s department of corrections (DOC) after January 1, 2000.

---

1 Although millions are incarcerated in the US at the time of this writing, western states typically have only one or two minimum security prisons, thus, to maximize privacy and confidentiality of study participants, I mask the state where this study took place, the name of the prison, and the individual participants.
Use of the January, 2000 conviction date ensured study participants: were not subject to the state’s persistent offender laws (e.g., “three strikes”); had not committed a most serious violent offense; and were not subject to an enhanced sentence for use of a firearm or aggravating conditions. Screening out serious violent crimes reduced threats to validity due to extreme pathology while still allowing participants control over offense-related information.

RRCC selected a liaison who did not have any role in deciding loss of privileges, change in custody status, revocation of earned release time, or movement to a different prison in response to an alleged violation prison rules. The liaison contacted all individuals deemed eligible by the DOC and provided IRB-approved information about the study via the prison’s communications system. No compensation or incentive was offered or given.

Participants

Ten men aged 22 to 49 participated in this study during their incarceration at RRCC. Eight participants are white; two are Asian. Although informed that I would not ask about their criminal history or use public record to obtain it, the men all volunteered information about their conviction. Six reported incarceration for drug offenses, two for property crimes committed to facilitate access to drugs, and two for other offenses.

Participants attended schools in seven states. Five attended majority-minority schools for at least a few years. One attended private school until grade 9. Consistent with national findings that 53% of incarcerated adults have no high school credentials upon first entry to prison (Greenberg, Dunleavy & Kutner, 2008), six participants left school without graduating and five entered prison without a GED.

Procedures

Each participant completed two one-on-one interviews held in a private office with no prison personnel present. Written consent form scored below fifth grade level on Flesch-Kincaid. Consent was reviewed before second interviews.

First interviews lasted 40-50 minutes and consisted of questions intended to elicit concrete memories of school. The core questions were: “If we had your school records here to look at what would they tell us about where you went to school and how much schooling you

---

2 During consent, I explained that I would assign pseudonyms to protect confidentiality. One individual demanded that I use his real name saying, “It is my story. I deserve to have my name on it.” After consulting with the IRB, we signed an amended consent form at the second interview. I understand this participant is committed to transforming his future by being honest about his past. Nevertheless, I as an early career researcher, I do not fully understand where this information will go or how it will be used. Thus, I do use nine pseudonyms and one real name in this paper, and out of an abundance of caution, I do not reveal which is which.
received?” and “What do you remember about school? What really stands out for you?” Follow-up questions prompted participants to think about the particulars of school experience, such as recess, and lunch time. Participants spontaneously volunteered information regarding risk factors of interest when it was relevant to their story of school.

Second interviews, 50 minutes in length, were held 10 to 14 days after first interviews, and combined semi-structured interviewing with life graphs (D’Sa, 2013). Participants were presented with laminated cards, each with one risk factor in the conceptual model, and asked to select all “cards that happened to you” and place them in chronological order based on the first time the risk occurred. To indicate that multiple risks occurred at the same age, participants arranged cards vertically (example below). If a participant failed to select the a risk he mentioned in first interviews, I asked whether he meant to include it, and if he did, it was added.

**Figure 1. Example Life Graph—Theo**

![Example Life Graph](image)

When the participant was satisfied with his life graph, he answered a series of questions about each risk factor, including the age at which it first occurred and how the experience has affected his life. For factors involving others, such as “family member incarcerated,” the participant was asked to identify his relationship to the person. For questions such as mental illness and drug use, he was asked to provide specifics, such as the diagnosis as he understood it or the drugs involved.

**Analytic Approach**

Understanding complex social issues requires a strong connection to lived experience (Seidman, 2005) in part because statistical analysis cannot determine the direction of relationships (Bollen, 1989). Thus, I sought to perform inductive analysis of interviews using
grounded coding (Charmaz, 2006) followed by focused coding (Saldana, 2009) which generated 10 categories, 35 subcategories and 31 themes.

With respect to life graphs, I configured the cards according to the record, and photographed them. Because participants offered timing in a variety of forms, I: assigned early memory to age 3-5; converted grade level to age using the assumption that participants entered kindergarten at age 5-6 and first grade at age 6-7; and associated references to middle school grades with an entry age of 11-12 and references to high school grades with an entry age of 14-15. After entering this data in Excel, I used data as the basis for timing and sequencing.

**Results: Timing, Sequencing & Accumulation of Risk Factors**

Participants experienced 5-15 risk factors, with a mean of 11. Nine men experienced all three categories in a sequence consistent with the conceptual model: first, ACEs; second, school risks; and finally, social and behavioral risk factors. Truancy, reported by all ten men, was the most frequently reported risk factor, followed by failing classes, smoking, using marijuana and using other drugs, which were each reported by eight men. The most common adverse childhood experience reported was parental divorce or separation followed by parental substance abuse.

ACEs accumulated “from when I was really little,” “for as long as I can remember” and “before I went to school.” Early years in school were relatively free from new risk factors; however, ACEs continued at home. At entry to middle school the majority of participants began to experience school risk factors related primarily to truancy, suspension and failing classes, as well as social and behavioral risks related primarily to ATOD use. This is unsurprising, as puberty is associated with an increase in sensation-seeking or risk-taking that persists for a few years before tapering off (Steinberg, 2014). Importantly, 27% of all accumulated risk factors occurred for the first time during middle school. At home, physical violence “stopped when I was twelve, thirteen.” For some, new freedoms helped: “Why be in a confrontation when you know you can be somewhere else?” Other became worthy opponents: “My dad still had a wicked anger problem until—I don’t know—until I was 13. Till I got bigger and then he couldn’t push me around.”

---

3 Picture-taking is generally forbidden in. To reconstruct the life graphs, I described the order for the audio recording. For example, the transcript associated with Figure 1 begins “ME: So as we go through these, I am going to say them out loud so they are on the tape so I know what order they went in…The first one is alcoholic at home.”
Figure 2. Accumulation of Risk Factors by Category at Age 3-20

Participant Perception of Risk Factors and School

Although first interviews focused on memories of school, participants reported risk factors. For example, in explaining how parents responded to getting into trouble at school, one participant said, “My dad was an abusive alcoholic, so you know, he would talk with his fists. And my mom would try to hide the fact. She would try to take the beating herself. And she couldn’t.” Another said: “My mom used to bribe my friends sometimes, because she had horses. So she’d be like, ‘Hey, I’ll let you have some weed if you guys go pack hay around for four hours, half a day.’ It was cool. I never really had issues with weed. I’d just get kind of stoned. Like some people get addicted to it or whatever, but it never really caused me problems. Like I never stole for it. I functioned well on it. It might because I’m ADHD.”

Findings: Complex Trauma

Interpersonal violence and parental substance abuse or mental illness sets the stage for a developmental disorder known as complex trauma (DeBellis & Zisk, 2014). Absent safety and responsiveness in caregiving, the organization of self, and understanding of how to relate to the world emotionally and functionally, is disrupted (van der Kolk, 2005). Functional impairments may occur in seven domains: attachment, biology, affect regulation, dissociation, behavioral control, cognition and self-concept (Cook et al., 2005). Although impairment from complex trauma may not rise to the level of a mental health disorder in childhood, it increases risk of: later mental illness (van der Kolk, 2005), addiction (Dube, Felitti et al., 2003), and/or poor physical health across the life span (DeBellis & Zisk, 2014). Interviews offered substantive evidence of impairment in attachment, affect regulation, behavioral control and cognition.
Secure attachment fosters a sense of self while disorganized attachment is problematic for relationship formation, boundaries, and empathy, and may be indicated by social isolation (Cook et al., 2005). Study participants reported feeling “overlooked,” and “slipping through the cracks.” “Fitting in was so uncomfortable and awkward. I didn’t know how to fit in. I didn’t know where to fit in. So I became completely lost and the only way I could find attention in my life was by getting in trouble. By doing things that would attract attention to me.” Several reported peer rejection. When asked the biggest challenge he faced in school, one replied, “It just felt like I didn’t have no friends.”

Healthy affect development fosters self-regulation. One indicator of impairment is avoidance of situations that produce unpleasant emotions (van der Kolk, 2005). Participants reported avoiding school by skipping classes “Because I don’t like this teacher, I don’t like this class.” Conversely, “I never skipped wood shop or anything like that.” “The teachers and classes I did like, I ended up going to.” Although some reported success at school despite truancy, most experienced negative consequences, including detention, summer school, failing classes, being held back and suspension from school. Rather than motivating re-engagement, however, consequences evoked sophisticated efforts to skirt detection; for example, “I would have people sign [for me]” and blocking the school’s attendance office on the family’s home phone.

Behavioral control is expected at school and beyond; however, complex trauma alters the stress system at the molecular and chemical level such that it becomes more reactive to stressors (Teicher et al., 2003). One participant described this outcome: “I used to have a really short fuse in my life. You know, until I was 23, 24. I used to snap at anything. I wouldn’t shy away from violence by any means. I come from a very bad household, so you know, it seems like the thing to do. You know, somebody pisses you off, you hit ‘em.” Entry to juvenile justice, suspension and drop out followed: “I got expelled for the rest of the year [for the fight] and I was supposed to come back the next year, but I never did. After that, I ended up dropping out. Unfortunately.”

Like the stress system, the brain is shaped by complex trauma; specifically, potentially reducing the size and functionality of the corpus callosum, hippocampus, amygdala, and cerebellar vermis (Teicher et al., 2003). Cognitive impairments associated with complex trauma include attentional problems and difficulty sustaining curiosity (Cook et al., 2005). Some participants expressed disinterest in school, others, disdain. The majority referred to themselves as “having ADD” or “being ADHD,” and described difficulty with focus. “You’re only there for what? 45 minutes? So you sit down, open up your book, listen to your
social studies teacher and you’re supposed to do your work, and you’re distracted by all your friends and all these girls, and then you’re off to your next class, and you didn’t really do nothing.” “It was kind mind-numbing the way they made you do things over and over.” The teachers “just talk and talk and talk,” “looking in the rear view mirror, looking at things that aren’t relevant.”

Findings: Centrality of Drugs in Experience, School and the Pathway to Prison

Substance abuse is common in complex trauma, and ATOD played a central role in participants’ school experience: “I’d cuss [teachers] out, tell them bad things. I didn’t want to be there. I didn’t want to be controlled. So much pain was going on inside me. I didn’t realize. I didn’t know how to deal with it. The only way I could really cope was to get loaded, to medicate myself. And I couldn’t do it in front of a teacher telling me what to do.”

Exposure and access to substance began early and at home. Six of the 10 reported an alcoholic or drug-using parent. Many were introduced to drugs by family members: “[My parents’] way of thinking about it was, ‘He’s going to smoke weed anyway. I’d rather he be at home.’” “[I was] probably 12…when my aunt first introduced me to pot.” “My grandmother was like, “I know you don’t like taking the Ritalin [which] is a dopamine inhibitor, and so is marijuana.” Early use was often supported by theft. For some, stealing escalated along with their habit: “I’m down for identity theft, basically because I was out there getting high… I’m embarrassed about [it] now. But I used to break into cars and take people’s checks. I’d write their checks and use their credit cards.” These were acts of desperation, not morality: “It’s just when you become a drug addict, you don’t mind all those walls. It’s so hard to explain to people. I used to be like, ‘What’s wrong with you? Stop stealing. Stop doing all these drugs.’ But when you actually do [drugs]… it’s a lot harder. It takes away everything that’s your personality.”

Six participants were incarcerated for manufacture or distribution of drugs. For them, dealing drugs was “just a business,” “my career, salesman of illegal drugs.” Engagement in this business also began early, with family involvement: “My mom figured out there was a lot of money in it …so she was like, ‘How much do you sell it for? How much do you get it for? Okay, go get me that! And then sell this for me.’” Only one participant was able to keep his business separate from using. For the others, dealing “pays for your habit, at least.”
Discussion

Throughout interviews, participants described their risk factors in inter-relationship, suggesting developmental cascades. Encompassing a broad array of phenomena” from the molecular to gene by environment interactions (Masten & Cicchetti, 2010, p. 492), developmental cascades describe transactional development and help to explain how “adaptive and maladaptive behaviors spread over time to promote or undermine development” (Masten & Cicchetti, 2010, p. 491). Timing and sequencing of risk, is a critical factor in understanding how developmental cascades unfold (Obradovic, Burt & Masten, 2010), as outcomes in one domain shapes subsequent function in other domains (Moilanen, Shaw & Maxwell, 2010). For example, social isolation, once established, might have an independent effect on subsequent development in affect regulation or cognition. In keeping with systems dynamics theory, one developmental experience may have a re-enforcing effect on another at one point in development and an independent effect on another developmental experience in another point in time.

Participants in this study describe a number of interconnected experiences that may be mapped as potential developmental cascades. Below is one illustrative example. Family violence and parental substance abuse re-enforce each other in the early years. Then, as described by participants, that dynamic produces impairments associated with complex trauma. A participants continue into the school years, they develop re-enforcing patterns of ATOD use, school truancy and theft which ultimately manifest as addiction, which re-enforces dealing. Both theft and dealing help to explain incarceration in adulthood. In strictly developmental terms, we might describe this cascade as household dysfunction resulting in complex trauma resulting in impairments in cognition and behavioral control ultimately resulting in pathology.

Hypothesized Developmental Cascade: Parent Generation Substance Use to Child Incarceration for Drug-Related Offense

10
References


