PTSD, Drinking, and Revictimization in Community-Residing Sexual Assault Survivors

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Structure of Today’s Presentation

- What are the links of CSA, PTSD, problem drinking and revictimization in ASA victims?
- How does disaggregating PTSD symptom clusters and problem drinking and illicit drug use help to understand pathways to revictimization?
- What is the role of social context factors like sexual assault disclosure and social reactions in PTSD and drinking outcomes of ASA?
- Implications and New NIH R01 Longitudinal Study

Longitudinal Relationships of PTSD, Drinking, and Revictimization

- PTSD is common in rape victims with at least 1/3 qualifying as having lifetime PTSD (Kilpatrick et al., 1992).
- PTSD and drinking problems are highly comorbid, especially in female victims of sexual traumas (Stewart, 1999).
- Female victims of CSA and ASA both face high risk of revictimization, so treating PTSD and substance abuse problems, common in sexual trauma victims, may help to reduce future revictimization.
- Recent revictimization may reignite negative sequelae from earlier childhood or adolescent assault experiences (e.g., Nashih, Mechanic, & Resick, 2000). These symptoms may activate maladaptive coping strategies that lead to problem drinking.
- Messman-Moore et al (2008) found that college women with PTSD who use substances to cope with distress were more likely to be raped.
- Few longitudinal studies have examined the relationships of PTSD, drinking, and revictimization in women from the community.

Extant Longitudinal Studies are Mixed

- Rape victims with alcohol problems have more severe PTSD, but PTSD may lead to increased drinking. Self-medication theory asserts that victims may mediate their symptoms of PTSD, which may worsen drinking over time (Stewart, 1999).
- Kilpatrick et al. (1997)’s NWS found violent assault predicted problem drinking in a longitudinal study, and that women revictimized during the study had worse problem drinking.
- Testa et al (2007) found ASA predicted PTSD, but only weakly predicted heavy drinking. PTSD did not predict increased problem drinking in community-residing young women.
- Kaysen et al (2008) - 65 victims assessed 3 times post-assault. Drinking victims had less intrusion and arousal symptoms initially, but their PFRD symptoms improved less over time. So, intoxication may inhibit cognitive processing of symptoms over time.
- Female problem drinkers use alcohol to cope with distress which is related to worse drinking outcomes (Ullman et al., 2005). Drinking to cope with distress and tension reduction expectancies mediated effects of CSA and traumatic events on greater problem drinking in ASA victims, whereas PTSD did not (Ullman et al., 2005).
Women’s Life Experiences Study (NIH)

- Recruitment
  - Two-wave mail survey (& follow-up interview)
  - Adult women -- college students, community residents, and mental health agency clients
  - Unwanted sexual experience since age 14 years

- Longitudinal Sample (2 waves, 1 year apart)
  - N=1084 Wave 1 (90% response rate)
  - N=625 Wave 2 (60% response rate)
  - No significant differences in attrition

Primary WLE Study Measures

Sexual Experiences Survey (SES; Koss & Gidycz, 1985)
- Assault Characteristics – (most serious)
- Rape Attribution Questionnaire (RAQ; Frazier, 2001)
- Carver’s COPE (Carver, Scheier, & Weintraub, 1989)
- Social Reactions Questionnaire (SRQ; Ullman, 2000)
- Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995)
- Problem Drinking (MAST, Selzer et al., 1971) & Drug use
- Trauma history (SLESQ, Goodman et al., 1990)
- Health Problems, Depression, Suicidal behavior, Revictimization

Sample Characteristics – Wave 1

- Just under half of the sample was African American.
- Slightly more than half were 18 – 30 years old.
- Most women had attended college or had a college degree, whereas one-third had less education.
- A majority had experienced a completed rape.
- Slightly more than 8 out of 10 had told someone about the sexual assault.
- Over half (54%) also had a CSA history & a median of 3 other traumatic life events.

Sample Demographics

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<tr>
<th>Ethnicity</th>
<th>Age</th>
<th>Income</th>
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<tbody>
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<td>Unmarried</td>
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ASA Characteristics & Outcomes

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<tr>
<td>None</td>
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<tr>
<td>Sexual contact</td>
<td>3.8% Acquaintance/Date</td>
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<tr>
<td>Sexual coercion</td>
<td>9.2% Rom Partner/Husband</td>
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<tr>
<td>Attempted rape</td>
<td>8.2% Other relative</td>
</tr>
<tr>
<td>Completed rape</td>
<td>71.4%</td>
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</table>

Victim Perceived Threat to Life 47.7%
Age at Assault M=19.2
Victim Injured 82.7%
PTSD 69.7%
Drinking Problem 44.8%
Revictimization 45.0%

Cross-lagged SEM Model of PTSD, Sexual Victimization, & Drinking

Cross-lagged panel design with a large (N=556) 2-wave ethnically diverse sample of women assault survivors.

- Does PTSD lead to problem drinking prospectively (e.g., self-medication hypothesis) or are the effects reciprocal?
- Does cumulative sexual victimization (CSA and ASA revictimization) experiences relate to greater PTSD and problem drinking over the follow-up?

Structural equation modeling revealed that CSA was associated with greater symptoms of PTSD and problem drinking and intervening sexual victimization was associated with greater symptoms of PTSD and problem drinking 1 year later.

No evidence that PTSD directly influenced problem drinking over the long term (e.g., self-medication), or vice versa. Rather, experiencing revictimization during the study predicted survivors' prospective PTSD and problem drinking symptoms.

Final Model of the Relations among CSA, Sexual Revictimization, PTSD Symptoms, and Problem Drinking

CSA, PTSD, & Substance Use: Correlates of Sexual Revictimization

Women who experienced both CSA and ASA may experience more PTSD symptoms and more substance use compared to women who experienced only ASA, and more PTSD symptoms and substance use would be related to greater rates of revictimization over 1 year.

We predicted that a) numbing symptoms would be directly related to revictimization and b) other PTSD symptoms would be indirectly related to revictimization through problem drinking and/or illicit drug use.

- Numbing symptoms may be related to greater revictimization risk by interfering with victim's ability to recognize SA risk.
- On the other hand, other PTSD symptoms such as arousal and re-experiencing may relate to greater risk-taking behavior such as heavy drinking which may help to dampen these symptoms, but also contribute to greater revictimization risk.

Does type of substance used affect the risk of revictimization? - we examined problem drinking and illicit drug use separately in the model.
Path Model of Revictimization Risk

- We investigated how CSA, PTSD symptom clusters, problem drinking, and illicit drug use act separately and in concert to affect susceptibility to sexual revictimization using SEM.

- A large, diverse, community sample of female ASA survivors \( (N = 556) \) completed 2 waves of a mail survey (Response rates: 90% at Time 1, 69% at Time 2).

Measures

- **ASA (T1) & Revictimization (T2)** assessed with the Sexual Experiences Survey (SES; identified women who had experienced completed rape, attempted rape, sexual coercion, and unwanted sexual contact at age 14 years or older; Koss & Gidycz, 1985)

- **CSA (T1)** assessed with the SES (identified women who had experienced completed rape, attempted rape, sexual coercion, and unwanted sexual contact before age 14; Koss, Gidycz, & Wisniewski, 1987)

- **PTSD (T1)** assessed with the Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995); PTSD symptom clusters were separated according to DSM criteria so that 4 clusters were represented: reexperiencing/intrusion, avoidance, arousal, and numbing symptoms

- **Problem Drinking (T1)** measured with the Michigan Alcoholism Screening Test (MAST; Sator, 1971)

- **Illicit Drug Use (T1)** summed measure for number of substances used (cocaine, heroin, and/or psychedelics)

Analyses

- An observed variables path analysis was conducted using maximum likelihood estimation to test a partially mediated model of sexual revictimization at 1-year follow-up with a structural equation modeling framework using Amos 7 (Arbuckle, 2006).

- Problem drinking and illicit drug use were correlated in the model because these variables were expected to be positively associated with each other based on past research (Kilpatrick et al., 2000).

- Numbing symptoms were entered as a separate variable independent of other PTSD symptoms (i.e., reexperiencing, avoidance, arousal), although numbing symptoms and other PTSD symptoms were correlated in the model.

- To improve the fit and identify the most parsimonious model, nonsignificant paths (except for the predicted effects of numbing symptoms) were removed from the preliminary path model based on the significance of the betas, and only predicted paths were retained.

Final Model of the Relations among CSA, PTSD Symptom Criteria, Substance Use, and Sexual Revictimization

Non-significant chi-square \( \chi^2(7, 556) = 12.90, p = .20 \) and satisfactory goodness-of-fit statistics indicate a good model fit (IFI = .99; NFI = .98, and RMSEA = .04).
Summary

- In our sample of ASA survivors, CSA had a direct positive effect on both numbing symptoms and other PTSD symptoms (i.e., reexperiencing, avoidance, arousal).
- As predicted, numbing symptoms mediated the relationship between CSA and subsequent revictimization at Time 2.
- Other PTSD symptoms did not significantly predict revictimization, but instead predicted problem drinking, which then predicted sexual revictimization.
- CSA only indirectly predicted problem drinking through other PTSD symptoms, consistent with past research suggesting that PTSD generally precedes problem drinking; there was no direct effect of CSA on problem drinking.
- Other PTSD symptoms predicted problem drinking, but not illicit drug use whereas numbing symptoms did not predict problem drinking, but did significantly predict illicit drug use.
- Drinking problems, but not illicit drug use, predicted sexual revictimization.
- When controlling for PTSD symptoms (both numbing and other symptoms) and substance use (i.e., problem drinking, illicit drug use), the direct relation between CSA and revictimization at Time 2 was not significant.

Implications

- Studies suggest the most robust predictor of future victimization is prior victimization (Collins, 1998; Krahé et al., 1999; Gidycz et al., 1995).
- Our results suggest that, once PTSD symptoms and problem drinking are accounted for, CSA does not directly predict future victimization.
- Numbing symptoms and problem drinking may be independently associated with risk of sexual revictimization.
- Treatment and prevention programs focused on addressing revictimized women should address numbing symptoms and substance abuse in female ASA victims.

Studying Social Contextual Factors

- Researchers have studied ASA recovery from an individual perspective, but have not looked at social context (e.g., social support), in relationship to recovery or prevention until recently.
- Meta-analyses show that social support is one of the strongest predictors of PTSD (Brewin et al., 2000; Ozer et al., 2003) and ASA victims have smaller, poorer quality networks (Golding et al., 2002).
- Social support is a critical resource for victims in the aftermath of sexual assault (Ullman, 1999) – network and post-assault reactions affect victims.
- Contact with informal networks & formal support providers can be helpful or harmful to victims (Campbell et al., 1999; Filipas & Ullman, 2001).

Integrating Social Support Constructs

- Research shows that social support relates to problem drinking in women (Walkers et al., 1997) and to PTSD in women (Ullman, 1999) separately, but few studies have examined support, PTSD, and drinking together.
- While trauma disclosure may be therapeutic, this effect depends on response to the disclosure (Lepak et al., 2000). Negative social reactions are common for victims disclosing assault and 2/3 disclose at some time following rape (Ullman, 2000).
- Negative reactions of blame, disbelief, and control are related to greater PTSD symptoms in cross-sectional and longitudinal research (Andrews et al., 1999; Ullman et al 2007; Zoellner et al., 1999).
- Female victims also face high risk of revictimization, so treating trauma and substance abuse problems may help to reduce future revictimization, but such approaches should address social networks.
- Few longitudinal studies have examined the relationships of PTSD, drinking, and revictimization in women or included social networks.
Why do Social Reactions Matter?

- Social network members and formal support sources frequently make negative responses (e.g., victim blame) to survivors' disclosures (Ullman, 1999).
- Negative reactions to survivors' disclosures of assault may predict PTSD, depression, problem drinking, and poorer perceived health (Andrews et al., 2003; Ullman et al., in press; Zoellner et al., 1999).
- Negative reactions are also related to increased avoidance coping, self-blame, and perhaps risk of revictimization (Ullman et al., 2007; Mason et al., 2009).
- We may be able to improve prediction of changes in post-assault recovery (e.g., PTSD, problem drinking) by examining social network factors.

Social Reactions Questionnaire (SRQ)

SRQ Subscales, Validation Study (Ullman, 2000)

Positive:
- Emotional support/belief (told you you were loved)
- Tangible aid/information support (took you to police)

Negative:
- Victim blame (said it was your fault)
- Distraction (told you to go on with your life)
- Taking control (said they were going to kill the guy)
- Stigma/treat differently (pulled away from you)
- Egocentric responses (asked why you did this to us)

Disclosure Characteristics

| Disclosure Rate: | 80.6% |

- Immediate 33.1%
- Days - weeks 29.7
- A year or more 37.3%

Disclosed To:

- Friend 83.8%
- Romantic Partner 65.1%
- Family (not parent) 47.2%
- MH Counselor 46.6%
- Medical personnel 27.4%
- Police 23.6%
- Rape crisis center 16.0%
- Religious leader 11.0%

Effect of Disclosure:

- Made things worse 20.7%
- Made no difference 22.4%
- Made things better 56.9%

Revictimization as a Moderator of Psychosocial Factors & Problem Drinking

- Sexual revictimization may be associated with increased problem drinking in women.
- Recent revictimization may reignite negative sequelae from earlier childhood or adolescent assault experiences (e.g., Nishith, Mechanic, & Resick, 2000), which may activate maladaptive coping strategies (avoidance coping) leading to problem drinking.
- Revictimized women may be more likely to blame themselves for repeated assault experiences, especially when they are blamed and treated poorly by others (Ullman, 1997; Ullman, Townsend, Filipas, & Starzynski, 2007).
- Traumatic life events may be associated with increased problem drinking over time, especially for revictimized women (e.g., Ullman & Brecklin, 2002; Ouimette & Brown, 2003; Schnurr & Green, 2004).
Hierarchical Logistic Regressions

Examined whether sexual revictimization moderated the effects of several psychosocial variables (coping, social reactions, traumatic events) on problem drinking over 1 year (Ullman & Najdowski, 2009).

A large, diverse, community sample of female ASA survivors ($N = 556$) completed 2 waves of a mail survey (Response rates: 90% at Time 1, 69% at Time 2).

Measures

- **ASA (T1) & Revictimization (T2)** assessed with the Sexual Experiences Survey (SES; identified women who had experienced completed rape, attempted rape, sexual coercion, and unwanted sexual contact at age 14 years or older; Koss & Gidycz, 1985)
- **Drinking to Cope with Distress & Avoidance Coping (T1)** measured with the Brief COPE (Carver, Scheier, & Weintraub, 1989)
- **Negative Social Reactions (T1)** survivors who had disclosed their assaults to others completed the Social Reactions Questionnaire (SRQ; Ullman, 2000)
- **Traumatic Life Events (T1)** assessed with the Stressful Life Events Screening Questionnaire (SLESQ; Goodman, Corcoran, Turner, Yuan, & Green, 1998)
- **Problem Drinking (T2)** measured with the Michigan Alcoholism Screening Test (MAST; Selzer, 1971)

Control Variables

- **Problem Drinking (T1)**
- **Child Sexual Assault (CSA) History (T1)** measured by the SES with regard to experiences before age 14 years (Koss, Gidycz, & Winniewski, 1987)
- **PTSD (T1)** assessed with the Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995)
- **Depression (T1)** measured by the CESD-10 (Andresen, Carter, Malmgren, & Patrick, 1994)
- **Alcohol-Related Assault (T1)**
- **Negative Social Reactions (T2)** (recent reactions to disclosures of ASA reported at T1)

Analyses

- Moderated hierarchical multiple regressions tested whether revictimization moderated effects of drinking to cope, general avoidance coping, negative reactions, and traumatic life events on T2 problem drinking.
  - 1st step: CSA history and T1 measures of traumatic life events, alcohol-related assault, PTSD, depression, negative reactions, drinking to cope, and problem drinking (T1 avoidance coping only in model testing its interaction with revictimization).
  - 2nd step: T2 negative reactions and revictimization
  - 3rd step: Interaction terms
### Results: Revictimization & T1 Drinking to Cope

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<tr>
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<tr>
<td>CSA history</td>
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<tr>
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<td>.34</td>
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<tr>
<td>T1 Alcohol-related assault</td>
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<td>.99</td>
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<td>T1 PTSD</td>
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<td>-.89</td>
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<td>T1 Depression</td>
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$R^2 = .60, R^2_\Delta = .05, F_\Delta(1, 146) = 16.62, p < .05$

### Results: Revictimization & T1 Avoidance Coping

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$R^2 = .56, R^2_\Delta = .01, F_\Delta(1, 140) = 3.59, p = .06$

### Results: Revictimization & T2 Negative Reactions

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<td>Revictimization X T2 Negative reactions</td>
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$R^2 = .56, R^2_\Delta = .01, F_\Delta(1, 146) = 3.81, p < .05$

### Results: Revictimization & T2 Traumatic Life Events

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<td>T1 Alcohol-related assault</td>
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<td>T1 PTSD</td>
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<tr>
<td>T1 Depression</td>
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<td>Revictimization X T2 Traumatic life events</td>
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<td>1.98</td>
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$R^2 = .62, R^2_\Delta = .01, F_\Delta(1, 141) = 3.90, p < .05$
Summary

- Even after controlling for trauma histories, psychological symptoms, and prior problem drinking, the tendency to drink as a coping mechanism significantly predicted ASA survivors’ problem drinking one year later.
- T2 problem drinking was greater for participants who were revictimized.
- Drinking to cope, avoidance coping, and recent negative reactions and traumatic life events had a significant impact on problem drinking for women who were revictimized between surveys, but not for women who reported ASA only at T1.

Implications

- Changes in ASA survivors’ problem drinking may be understood by looking at risk of revictimization, drinking to cope with distress, recent traumatic life events, and social reactions to survivors’ assault disclosures.
- General avoidance coping and whether assaults were alcohol-related are less relevant for this outcome, even though these factors are important for other aspects of rape aftermath (Macy et al., 2006; Ullman et al., in press).
- Further research on the epidemiology of ASA survivors’ problem drinking is warranted.
- Interventions to reduce problem drinking in female ASA survivors should target maladaptive coping styles, improve social network members’ supportiveness, and education on safety issues and risk reduction.

New NIH Study Continuing Research

- NIAAA follow-up study: 4 wave panel study of SA victims to examine risk and protective factors for PTSD, drinking, revictimization outcomes, PTG etc.
  - Study protective factors: social support, assertiveness, positive emotions, perceived control, in addition to risk factors studied in the prior R01.
  - Compare alcohol and non-alcohol related assaults.
  - Examine alcohol-specific social reactions.

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