Latent Profiles Among Sexual Assault Survivors: Understanding Survivors and Their Assault Experiences

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UNC School of Social Work
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Introduction

This presentation is based on a study using a sample of 415 college women to determine multivariate profiles of contextual factors among sexually assaulted women.

Recommendations for tailored interventions are provided.
Research on Interventions to Prevent Sexual Aggression

- Research suggests gender-specific interventions (Rozee & Koss, 2001; Ullman, 2002)
  - Women: resistance preparation
  - Men: primary prevention

- Research shows women may benefit from targeted risk management interventions (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001)

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Research on Interventions to Prevent Sexual Aggression Cont.

- However, little research exists on how to tailor programs
- Effective tailoring requires
  - Knowledge of which assault incidence correlates should be targeted
    - E.g., alcohol use and victimization history
  - Cumulative effects of factors foster differing degrees of vulnerability
Previous Research on Important Contextualizing Factors

Factors with proven links to acquaintance sexual assault (Macy, Nurius, and Norris, 2006)

1. Victimization history
2. Alcohol consumption
3. Relationship expectations of perpetrators male
4. Sexual assertiveness
Study Purpose

“To test for distinct multivariate profiles of contextual factors among sexually assaulted women to discern how relevant contextual factors may combine differentially for groups of women”
Current Study Contextual Factors

- **Victimization history** *(Gidycz, Hanson, & Layman, 1995)*
- **Alcohol use** *(Testa & Parks, 1996)*
- **Positive relationship expectancies about assailant prior to assault** *(Amick & Calhoun, 1987; Nurius & Norris, 1996)*
- **Precautionary habits** *(Hickman & Muehlenhard, 1997)*
Victimization History

Victims of sexual assault are at increased risk for repeat assaults (Breitenbecher, 2001; Gidycz et al., 1995)

Possible contributing factors
- Inadequate response to risk cues
- Lack of assertion skills
- Low perceived self-efficacy to resist
- High level of substance use (Marx, Calhoun, Wilson, & Meyerson, 2001; Yeater & O’Donohue, 1999)
Alcohol Consumption

- Limits women’s perceptual awareness
- Limits women’s ability to assertively respond (Abbey et al., 2001)
- May be used by assailant to weaken women’s defenses
Positive Relationship Expectancies About Assailant

- Requires cognitive shift from social attitude to safety
  - May result in self-doubt and internal conflict – limiting women’s resistance

(Nurius, 2000; Ullman & Siegel, 1993)
Precautionary Habits

Definition:
Habits used to gain or exercise control in a potential sexually aggressive situation

Can serve as protective factors

Women who believe they can influence a threatening situation may respond more assertively

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Latent Profile Analysis (LPA)

- Identifies specific risk and protective factors based on the contextual factors that likely influence the type of assault and how the woman will respond (Bogat et al., 2005; Mitchell & Plunkett, 2000)

- Established 4 significantly distinct subgroups
  1. Victimization-Relationship
  2. Relationship-Precautionary
  3. Alcohol-Low Else
  4. Alcohol-Victimization

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Analyses

Other related variables assessed:

- Childhood abuse (Wyatt, Guthrie, & Notgrass, 1992)
- Assailant intoxication (Abbey et al., 2001)
- Intimacy orientation characterizing victims’ social goals at that time (Sanderson & Cantor, 1995)
- Participation in assault trainings (Thompson, 1991)
- Assailant behaviors
  - Coercive tactics (verbal, substance use, force)
  - Types of sexually aggressive behaviors used against women
Participants

- 415 women who had experienced sexual assault

Inclusion criteria
- >18 yrs old
- >16 yrs when sexually assaulted
- ≤ 5 year lapse between assault and study participation
## Participants Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Participants (N = 417)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean Age</strong></td>
<td>21.7 (SD = 3.82)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>79%</td>
</tr>
<tr>
<td>Asian/or Pacific Islander</td>
<td>8%</td>
</tr>
<tr>
<td>African American</td>
<td>5%</td>
</tr>
<tr>
<td>Latina</td>
<td>2%</td>
</tr>
<tr>
<td>Native American</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Grade Level</strong></td>
<td></td>
</tr>
<tr>
<td>Undergraduate*</td>
<td>86%</td>
</tr>
<tr>
<td>Postbaccalaureate</td>
<td>14%</td>
</tr>
</tbody>
</table>

*sample evenly distributed over the 4 undergraduate class levels

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Study Definition

**Sexual assault:**

Included “rape, attempted rape, and physically coercive acts directed toward obtaining nonconsensual sexual intercourse by a nonrelative male acquaintance who was neither her husband nor a partner with whom she was living”
Recruitment

- Recruited from 2 colleges in the same urban northwest area
- Invitation letters sent to random sample of registered female students
- Notices placed in dorms, sororities, campus bulletin boards, and campus newspapers
Methods

- Participants were given a self-report questionnaire and asked to recall the most severe incident within study criteria
- Included priming questions and a written narrative to activate the memory
Measures: Contextualizing Factors

- Prior victimization
  - Used modified version of *Sexual Experiences Survey* to measure sexual assault experiences prior to the most severe assault (Koss & Gidycz, 1985)
  - Violent victimization measurement included number of incidents

- Alcohol consumption
  - Measured by asking “Approximately how many drinks did you drink before the incident occurred”
Measures: Contextualizing Factors
Cont.

Positive relationship expectations
- Mean-based scale to measure the degree the participant perceived relationship with assailant as positive prior to assault
- E.g. to what extent did she like, trust assailant prior to assault

Precautionary habits
- Scale measured degree to which participant engaged in behaviors, prior to assault, to protect herself from assault
- E.g., “tried to leave if a guy came on too strong” “avoided guys who invaded my personal space”
Group Difference Variables

Childhood Abuse History

- Measured using yes/no response item for childhood experiences of
  1. Sexual abuse
  2. Physical punishment or caregiver force that caused injury

- Yes response to either item classified as child abuse

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Group Difference Variables Cont.

- **Assailant intoxication**
  - Asked whether assailant intoxicated at time of assault (yes/no)
  - Degree of intoxication measured on 0-4 Likert-type scale.

- **Intimacy orientation**
  - Three items from Social Goals Scale (Sanderson & Cantor, 1995)
  - Measured current life-task orientation toward forming intimate relationships
  - E.g., “I tried to date men with whom I might fall in love”
Group Difference Variables Cont.

- Assault training
  - Number of assault awareness activities and trainings they participated in prior to assault

- Assailant assault acts
  - 11 measures summed to create two indices
    - Fondling-groping assault acts
    - Penetrative assault acts

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Group Difference Variables Cont.

Assault coercion

10 measures summed to create 3 indices:

- Verbal coercion (e.g., “threats to end relationship”)
- Substance coercion (e.g., “use of alcohol or use of drugs to make me more vulnerable”)
- Forceful coercion (e.g., “use of violence or use of physical force”)

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Analysis

- Mplus 3.0 used to perform LPA (Muthen & Muthen, 2004)
- Optimal number of groups identified using the substantive meaningfulness of the models and three-model fit statistics
  - Bayesian Information Criterion (BIC)
  - Lo-Mendell-Rubin (L-M-R) test statistic
  - Probability statistics (Everitt et al., 2001; Muthen, 2002)
Fit Statistics for Latent Profile Models

- One class model
  - BIC: 5666.82
- Two class model
  - BIC: 5551.49
  - L-M-R: 140.92***
- Three class model
  - BIC: 5526.54
  - L-M-R: 53.33**
- Four class model
  - BIC: 5388.44
  - L-M-R: 96.86*
- Five class model
  - BIC: 5389.55
  - L-M-R: 57.78

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

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Latent Profile Indicator Contextual Factor Means and Standard Deviations by Groups

<table>
<thead>
<tr>
<th>Contextual Factors</th>
<th>Victimization-Relationship ($n=37$)</th>
<th>Relationship-Protective ($n=217$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>1.12</td>
<td>1.56</td>
</tr>
<tr>
<td>Victimization</td>
<td>49.12</td>
<td>10.59</td>
</tr>
<tr>
<td>Precautionary habits</td>
<td>2.68</td>
<td>.55</td>
</tr>
<tr>
<td>Relationship expectancies</td>
<td>2.96</td>
<td>1.01</td>
</tr>
</tbody>
</table>
### Latent Profile Indicator Contextual Factor Means and Standard Deviations by Groups Cont.

<table>
<thead>
<tr>
<th>Contextual Factors</th>
<th>Alcohol-Low Else ($n=122$)</th>
<th>Alcohol Victimization ($n=39$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>5.10</td>
<td>1.27</td>
</tr>
<tr>
<td>Victimization</td>
<td>12.88</td>
<td>9.57</td>
</tr>
<tr>
<td>Precautionary habits</td>
<td>2.76</td>
<td>.64</td>
</tr>
<tr>
<td>Relationship expectancies</td>
<td>2.65</td>
<td>0.94</td>
</tr>
</tbody>
</table>
Profile Group Difference Analyses

- Differences among groups measured using one-way ANOVA and chi-square tests
  - Differences across profile groups on variables related to contextual factors
  - Differences on perpetrators’ forms of coercion and assault behavior

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## Percentages Among Profile Groups for Group Difference Variables

<table>
<thead>
<tr>
<th>Measures</th>
<th>Sample $(n=415)$</th>
<th>Victimization Relationship $(n=37)$</th>
<th>Relationship-Precautionary $(n=217)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child abuse sexual and/or physical</td>
<td>40.0%</td>
<td>67.6%</td>
<td>37.8%</td>
</tr>
<tr>
<td>Assailants consuming alcohol</td>
<td>60.0%</td>
<td>51.4%</td>
<td>39.6%</td>
</tr>
</tbody>
</table>

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## Percentages Among Profile Groups for Group Difference Variables

<table>
<thead>
<tr>
<th>Measures</th>
<th>Alcohol-Low Else ($n=122$)</th>
<th>Alcohol-Victimization ($n=39$)</th>
<th>Statistical Analysis $X^2(3)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child abuse sexual and/or physical</td>
<td>36.1%</td>
<td>38.5%</td>
<td>12.83**</td>
</tr>
<tr>
<td>Assailants consuming alcohol</td>
<td>96.7%</td>
<td>100.0%</td>
<td>132.14***</td>
</tr>
</tbody>
</table>

**$p<.01$, ***$p<.001$
### Means and Differences Tests Among Profile Groups for Group Difference Variables

<table>
<thead>
<tr>
<th>Measures</th>
<th>Sample ($n=415$)</th>
<th>Victimization Relationship ($n=37$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Assailant intoxication</td>
<td>1.63</td>
<td>1.67</td>
</tr>
<tr>
<td>Intimacy goal orientation</td>
<td>2.26</td>
<td>.98</td>
</tr>
<tr>
<td>Assault training participation</td>
<td>1.20</td>
<td>1.05</td>
</tr>
</tbody>
</table>

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### Means and Differences Tests Among Profile Groups for Group Difference Variables Cont.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Relationship-Precautionary (n=217)</th>
<th>Alcohol-Low Else (n=122)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Assailant intoxication</td>
<td>.89</td>
<td>1.41</td>
</tr>
<tr>
<td>Intimacy goal orientation</td>
<td>2.36</td>
<td>.94</td>
</tr>
<tr>
<td>Assault training participation</td>
<td>1.18</td>
<td>1.02</td>
</tr>
</tbody>
</table>
## Means and Differences Tests Among Profile Groups for Group Difference Variables Cont.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Alcohol Victimization (n=39)</th>
<th>Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Assailant intoxication</td>
<td>2.00</td>
<td>1.47</td>
</tr>
<tr>
<td>Intimacy goal orientation</td>
<td>2.20</td>
<td>1.01</td>
</tr>
<tr>
<td>Assault training participation</td>
<td>1.31</td>
<td>1.15</td>
</tr>
</tbody>
</table>

* *p*<.05, ** *p*<.001
Coercion and Assault Means, Standard Deviations, and ANOVA Results Among Profile Groups

<table>
<thead>
<tr>
<th>Coercion and assault</th>
<th>Victimization Relationship (n=37)</th>
<th>Relationship-Precautionary (n=217)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>1.41</td>
<td>.76</td>
</tr>
<tr>
<td>Forceful coercion</td>
<td>1.32</td>
<td>.78</td>
</tr>
<tr>
<td>Substance coercion</td>
<td>.27</td>
<td>.61</td>
</tr>
<tr>
<td>Fondle-grope assault</td>
<td>3.22</td>
<td>1.47</td>
</tr>
<tr>
<td>Penetrative assault</td>
<td>1.38</td>
<td>.89</td>
</tr>
</tbody>
</table>

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Coercion and Assault Means, Standard Deviations, and ANOVA Results Among Profile Groups

<table>
<thead>
<tr>
<th>Coercion and assault</th>
<th>Alcohol-Low Else (n=122)</th>
<th>Alcohol Victimization (n=39)</th>
<th>F Test (3.415)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>1.18</td>
<td>.72</td>
<td>1.03</td>
</tr>
<tr>
<td>Forceful coercion</td>
<td>1.01</td>
<td>.87</td>
<td>.74</td>
</tr>
<tr>
<td>Substance coercion</td>
<td>.64</td>
<td>.61</td>
<td>.64</td>
</tr>
<tr>
<td>Fondle-grope assault</td>
<td>2.54</td>
<td>1.64</td>
<td>2.90</td>
</tr>
<tr>
<td>Penetrative assault</td>
<td>1.09</td>
<td>.87</td>
<td>1.23</td>
</tr>
</tbody>
</table>

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Discussion

- Current study found distinct multivariate vulnerability profiles among women with history of sexual assault
- LPA found 4 significantly distinct subgroups of women
- Findings show how contextual factors can combine to effect women’s vulnerability to assault and capacity to resist
Discussion: Victimization-Relationship

Characterized by:
- Higher adolescent sexual victimization
- Lower alcohol consumption and precautionary habits
- Relatively positive relationship expectancies

Contrasts the frequently made association between victimization histories and higher levels of substance use (Logan, Walker, Cole, & Leukefeld, 2002)
These women are at risk for being targeted by sexually aggressive men who abuse emotional needs and intimate relationships. History of repeated sexual trauma findings:

- Higher probability of relationships with coercive men and effect of repeated trauma decreases mental health, self-efficacy, and ability to recognize and respond to danger (Gold, Sinclair, Balge, 1999; Logan et al., 2002)

- Training and support needs of these women differ from women with less relationship investment, but higher alcohol intake
Discussion: Alcohol-Victimization

- Most assailants consumed alcohol prior to assault
- Reported high levels of substance coercion on part of assailants
- Higher drinking patterns
  - Higher numbers of drinks
  - Lower priority on developing intimate relationships
- High level of alcohol consumption mixed with proximal victimization exposure
Discussion: Alcohol-Victimization Cont.

- Lowest levels of verbal and forceful coercion mixed with more severe levels of assault act
  - Alcohol impairment likely causes less resistance to their assailant
  - Consistent with prior research – alcohol and prior victimization increase women’s vulnerability to sexual assault (Miller, Downs, & Testa, 1993)

- At greater risk for self-blame and psychological distress

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Discussion: Alcohol-Low Else

- Reported high alcohol use prior to assault
- Level of impairment and severity of assault slightly lower than alcohol-victimization group
- Many women do not view alcohol as a risk applying to them (Cue, George, & Norris, 1996)
Recommendations for Alcohol-Victimization and Alcohol-Low Else Groups

- Target women consuming high quantities of alcohol with tailored interventions (Combs-Lane & Smith, 2002)
- Include situational alcohol consumption with other contextualizing factors (e.g., prior victimization)
- Harm reduction strategies paired with sexual assault avoidance and resistance training (Marlatt & Witkiewitz, 2002)
Discussion: Relationship-Precautionary

- Higher precautionary behaviors imply greater awareness of sexual aggression and avoidance strategies.
  - Findings suggest strategies could be improved through training.
- Emphasis on relational factors suggest interventions should acknowledge their importance (Amaro, 1995).
Discussion: Relationship-Precautionary

- Assault avoidance involves conflicts between safety and relational priorities (Nurius, 2000)
- Particularly relevant for adolescents because of the developmental importance of intimate relationships (Sanderson & Cantor, 1995)
Interventions Recommendations

- Prevention interventions should focus on developing self-regulatory skills
  - E.g., skills to assess, acknowledge, and act in self-protection within intimate relationships (Rozee & Koss, 2001)
  - These skills could be useful for all women
- Targeted trainings for women with increased risk or protection to address resistance challenges and reinforce resistance skills
Study Limitations

- Self-reported experiences during assault
- Sample self-selected by women who contacted researchers
  - Sample may not be representative of college women
- Unknown whether results are generalizable across ethnic, racial, economic, cultural, and community groups
  - Additional research with diverse sample is needed
Suggestions for Future Research

- Additional research needed
  - Life course revictimization vulnerability
    - Effects of the combinations of childhood and adolescent victimizations
    - Comprehensive measure of childhood violence
  - Person-centered research to examine risk and protection factors


Resources Cont.


