Nightmares and Suicidality: What Is The Link?
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Disclosure Statement
The speakers have no conflicts of interest to disclose.

Objectives
• Describe an evidence-based practice approach to understanding the relationship of nightmares to suicidality.
• Discuss nightmares as a risk factor for suicide.
• Discuss the implications of nightmares as a suicide risk factor to nursing practice.
Sleep Disturbance and Suicide

Significant changes in sleep are now listed among the top 10 warning signs of suicide from the Substance Abuse and Mental Health Services Administration. (National Mental Health Information Center 2005)

<table>
<thead>
<tr>
<th>Increased suicidal ideation in elderly</th>
<th>Increased risk for suicide among elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased depression among adolescents</td>
<td>Increased suicides among adolescents</td>
</tr>
<tr>
<td>Attempted suicides</td>
<td>Death by Suicide</td>
</tr>
</tbody>
</table>

(Krakow et al., 2003; Agargun et al., 1997; Fawcett et al., 1990; Turvey et al., 2002; Goldstein et al., 2008)

Ask the Burning Question

In people with psychiatric symptoms, how do nightmares influence suicidality?

- **Level of Evidence**
  - Level IV: Cohort study; Survey Design

- **Hypotheses**
  - Specific sleep problems, including insomnia, nightmare frequency, and sleep-related breathing problems would be associated with depressive symptoms.
  - Insomnia, nightmare frequency, and sleep related breathing symptoms would be associated with suicidality.
  - These relationships would exist even after controlling for depressive symptoms.

- **Sample and setting**
  - 176 outpatients
  - University affiliated mental health clinic (primarily non-students)

**Results**

Hypothesis 1
- All individual variables were associated with depression ($p \leq 0.05$).

Hypothesis 2
- All 3 sleep variables associated with suicidality as measured by the BSS.
  - $R^2 = 0.10$, $p < 0.001$

Hypothesis 3
- Nightmares contributed to suicidality after controlling for depressive symptoms
- After controlling for gender, association reached statistical significance
  - $B = 0.17$, $t = 2.07$, $p = 0.04$

**Critique**

- Sound methodology used to test hypotheses
  - Method consistent with study aims
  - 4 of the 5 instruments were valid and reliable.
  - Multiple steps were used in regression analyses to account for results
  - Makes substantial contribution to the literature
  - Has relevance to our population.

- Limitations
  - Reliance on self-reported indices of sleep may limit the findings of the study
  - The breathing subscale has not been formally validated: Potentially incomplete or inaccurate assessment of symptoms


- Level of Evidence
  - Level IV: Cross-sectional

- Hypotheses:
  - To examine the prevalence of specific sleep disturbances in suicide attempters.
  - To test the associations between specific sleep disturbances and suicidality.

- Sample and Setting
  - N = 165 (Age Range = 18-69)
  - Following suicide attempt
  - Large university area in Sweden
Sjostrom et al., 2007
Results
• 89% reported some kind of sleep disturbance
  – Difficulty falling asleep (73%)
  – Difficulties maintaining sleep (69%)
  – Nightmares (66%)
  – Early morning awakening (58%)
  – Nightmares were associated with a 5-fold increase in risk for suicide
  • Even after adjusting for psychiatric diagnoses and psychiatric symptom severity.
    – High SUAS - Odds Ratio = 5.01, CI 1.99-12.61, p = 0.001

Sjostrom et al., 2009
A Follow-Up Study
• Two year follow up of the same cohort (2007)
• 98/165 subjects participated
• Aim: Determine whether those reporting sleep disturbances and/or frequent nightmares were at increased risk of repeat suicide behavior.
• 26% of the subjects made a repeat attempt within 2 years.
• Those who repeated suicide attempts were more likely to have reported frequent nightmares at baseline.

• Level of Evidence
  • Level IV: Cohort study; Survey Design
• Hypotheses:
  • Insomnia will be significantly related to suicidal ideation.
  • Nightmares will be significantly related to suicidal ideation.
  • Nightmares will be related to suicidal ideation independent of insomnia symptoms.
  • Nightmares would be significantly related to suicidal ideation when symptoms of insomnia, depression, anxiety and PTSD are controlled.
• Sample and setting
  • 583 college students
  • Large public university
<table>
<thead>
<tr>
<th>Measure</th>
<th>% over Clinical Cutoff Score</th>
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<tbody>
<tr>
<td>Insomnia Symptoms</td>
<td>13.1</td>
</tr>
<tr>
<td>Nightmares</td>
<td>10.2</td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>44.4</td>
</tr>
<tr>
<td>PTSD Symptoms</td>
<td>12.1</td>
</tr>
<tr>
<td>Anxiety Symptoms</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Nadorff et al., 2011

Results

- **Hypothesis 1**: Insomnia symptoms were significantly related to suicidal ideation $B = 0.045$ (SE = 0.009), ($P < 0.01$), $d = 0.43$, $R^2 = 0.05$

- **Hypothesis 2**: Nightmares were significantly related to suicidal ideation $B = 0.054$ (SE = 0.008), $p < 0.01$, $d = 0.56$, $R^2 = 0.07$

- **Hypothesis 3**: Insomnia symptoms and nightmares significantly associated with suicidal ideation, with small to moderate effect sizes. ($d = 0.32$ and $d = 0.47$ respectively). Significant amount of variance in suicidal ideation when nightmares was added. ($R^2$ of 0.05, $p < 0.01$)

- **Hypothesis 4**: Nightmares were significantly related to suicidality when symptoms of insomnia, depression, anxiety, and PTSD were controlled.

Conclusions

- Insomnia symptom duration is significantly associated with suicide risk independent of severity of current insomnia symptoms

- Nightmare duration is significantly associated with suicide risk independent of severity of current nightmares

- Insomnia symptoms and nightmare duration are significantly related to suicide risk after controlling for depressive symptoms, anxiety symptoms, and PTSD symptoms, current insomnia and current nightmares.
Critique

• Methods used were appropriate to the aims of the study.
• Psychometrically sound instruments were used.
• A comprehensive approach was used to account for response bias.
• Appropriate methods were used to address multicollinearity concerns.

• Limitations
  – College student sample not generalizable to other groups
    • Age and education
    • Mostly Caucasian
  – SBQ lacks sensitivity to recent changes in suicidal ideation
    • However commonly used and well validated instrument

  • Level I: Meta-analysis
  • Examined 39 studies
    • 147, 753 subjects
  • Electronic databases were accessed dating from 1966-2011.
  • Examined sleep disturbances, suicide outcomes, nightmares, insomnia, suicidal ideation, suicide attempts.
  • The relative risk for suicide increased from 1.95 to 2.95 in subjects with sleep disturbance.
  • Insomnia and nightmares seem to represent risk factors for suicidality.

McCall, W. V., Batson, N., Webster, M., Case, L. D., Joshi, I., Derreberry, T., Farris, S. R. (2013). Nightmares and Dysfunctional Beliefs about Sleep Mediate the Effect of Insomnia Symptoms on Suicidal Ideation. Journal of Clinical Sleep Medicine, 9(2), 135-140.
  • Level of Evidence
    • Level IV: Cross-sectional study
  • Survey Design
  • Hypothesis:
    • The intensity of insomnia symptoms is positively correlated with nightmares as well as dysfunctional beliefs and attitudes about sleep, which in turn mediate the intensity of suicidal ideation.
  • Sample-50 Participants with various psychiatric diagnoses
McCall et al., 2013
Analyses and Results

• Pearson r correlations among ISI, DBAS, DDNSI and Beck SSI

| Beck SSI | ISI 0.34 (p = <0.05) | DBAS 0.49 (p = <0.001) | DDNSI 0.60 (p = <0.001) |

These results provide support that there is a significant relationship between the 3 variables (ISI, DBAS, and DDNSI) and suicidality.

McCall et al., 2013
Analyses and Results

• Mediation analyses performed

<table>
<thead>
<tr>
<th>Effect</th>
<th>Unadjusted Effect (95% CI)</th>
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<tbody>
<tr>
<td>Total Effect of ISI</td>
<td>0.64 (0.14, 1.15)</td>
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<tr>
<td>Indirect Effect of ISI</td>
<td>DDNSI 0.35 (0.05, 0.75)</td>
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<tr>
<td></td>
<td>DBAS 0.38 (-0.03, 0.97)</td>
</tr>
</tbody>
</table>

Critique

• Sample size was based on power analysis a priori
  - ≥ 80% power for detecting correlations ≥ 0.4 among insomnia symptoms, dysfunctional beliefs, nightmares, and suicidal ideation at 5% level of significance
• Results do not suggest causality.
• The study contributes important information about the role of nightmares in suicidal patients.
• Results are relative to our EBP question
• Results suggest need for assessing nightmares and dysfunctional beliefs among patients with suicidality.
• Limitations
  - Use of convenience sample
  - Wide but uneven use of psychotropic medications
  - Un-controlled effects on insomnia and suicidality

Psychiatric diagnoses not based on DSM-5

Mahoney, Pyle, Sphar
Treatment Options

- Medication
  - Prazosin
    - First line (Level A)
  - Clonidine

- Non-Pharmacologic
  - Cognitive Behavioral Therapy
    - Image Rehearsal Therapy
    - Exposure Therapy
    - Desensitization Therapy
  - Progressive Muscle Relaxation


Burning Question

In people with psychiatric symptoms, how do nightmares influence suicidality?

- Nightmares are positively correlated with suicidality.
- Nightmares are a risk factor for suicidality in psychiatric patients.
  - Independent of insomnia (Nadorff et al., 2011)
  - After controlling for depressive symptoms (Bernert et al., 2005)
  - Study subjects well represented Menninger population
    - Even college student sample presented with high incidence of psychiatric symptoms, i.e. depressive symptoms, anxiety symptoms

Application to Practice

- It is imperative to first educate nurses of the significance of relationship of nightmares and suicidality.
- Consistently assess patients for the frequency, severity, and duration of nightmares.
- Integrate the presence and frequency of nightmares on problems list in the treatment plan.
- Team advocacy for addressing nightmares in a comprehensive manner.