The effect of COVID-related changes in diet, exercise, sleep patterns, and mood on stress levels of RNs who work 12-hour shifts during the pandemic

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The effect of diet, exercise, sleep patterns, and mood on stress levels of RNs who work 12-hour shifts

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June 14, 2021

Providence Nurses Supporting Health for a Better World
Objectives

(1) Discuss the relationship between stress and well-being

(2) Describe how nurses delivering working in acute care during the pandemic are at high-risk for stress

(3) Articulate preliminary trends of COVID on self-reported health habits, emotional well-being, and stress of Registered Nurses providing direct patient care
Purpose

• To gain preliminary insight into exercise, sleep, dietary habits, emotional well-being, and stress in 12-hour shift RNs working during the COVID pandemic.
Background

• Registered Nurses (RN’s) at risk for adverse health conditions such as metabolic syndrome due to:
  • High stress work
  • Night shift work
Background

• Nursing physical and emotional health suffered further in midst of COVID
Background

• Adequate sleep, diet, and exercise can mitigate health risk
  • Emotional well-being may also be enhanced
  • Stress may negatively impact health habits and emotional well-being
• Unknown: Relationship between stress and health changes during COVID
Methods - Study Overview

• Observational, descriptive pilot study (ongoing)
• Health habits tracked for 7 days
Methods - Recruitment

- Registered Nurses (RN’s) recruited with flyers posted in break rooms, email, or social media platforms
- Phased recruitment efforts included RN’s working in WA, then CA, then TX and NM
- RN’s completed an electronic eligibility screening form
- Invited to e-consent if eligible
Methods-Onboarding and Measures

- Participants received online module with links to surveys and health logs
- Participants completed:
  - Perceived Stress Scale-4
  - Demographics
  - COVID health questions
Methods-Onboarding and Measures

- Stress defined as: state of mental or emotional strain

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### Perceived Stress Scale 4 (PSS-4)

**INSTRUCTIONS**
The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, please indicate your response by placing an “X” over the square representing HOW OFTEN you felt or thought a certain way.

1. In the last month, how often have you felt that you were unable to control the important things in your life?
   - Never
   - Almost Never
   - Sometimes
   - Fairly Often
   - Very Often

2. In the last month, how often have you felt confident about your ability to handle your personal problems?
   - Never
   - Almost Never
   - Sometimes
   - Fairly Often
   - Very Often

3. In the last month, how often have you felt that things were going your way?
   - Never
   - Almost Never
   - Sometimes
   - Fairly Often
   - Very Often

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
   - Never
   - Almost Never
   - Sometimes
   - Fairly Often
   - Very Often

---

### Scoring for the Perceived Stress Scale 4:

<table>
<thead>
<tr>
<th>Questions 1 and 4</th>
<th>Questions 2 and 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Never</td>
<td>4 = Never</td>
</tr>
<tr>
<td>1 = Almost Never</td>
<td>3 = Almost Never</td>
</tr>
<tr>
<td>2 = Sometimes</td>
<td>2 = Sometimes</td>
</tr>
<tr>
<td>3 = Fairly Often</td>
<td>1 = Fairly Often</td>
</tr>
<tr>
<td>4 = Very Often</td>
<td>0 = Very Often</td>
</tr>
</tbody>
</table>

Lowest score: 0
Highest score: 16
## Results

<table>
<thead>
<tr>
<th></th>
<th>Day Shift (n=24)</th>
<th>Night Shift (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, % (n)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 to 30 years</td>
<td>25% (6)</td>
<td>37.5% (6)</td>
</tr>
<tr>
<td>31 to 40 years</td>
<td>50% (12)</td>
<td>50% (8)</td>
</tr>
<tr>
<td>41 to 50 years</td>
<td>12.5% (3)</td>
<td>12.5% (2)</td>
</tr>
<tr>
<td>51 to 60 years</td>
<td>12.5% (3)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender, % (n)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>83.3% (20)</td>
<td>75% (12)</td>
</tr>
<tr>
<td>Male</td>
<td>16.7% (4)</td>
<td>25% (4)</td>
</tr>
<tr>
<td><strong>Mean sleep, hours (SD)</strong></td>
<td>6.8 (1.3)</td>
<td>7.2 (1.3)</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th></th>
<th>Unchanged or improved since COVID (n); Perceived Stress Mean (SD)</th>
<th>Worse since COVID (n); Perceived Stress Mean (SD)</th>
<th>Difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise amount</strong></td>
<td>21; 5.1 (3.1)</td>
<td>19; 6.8 (2.5)</td>
<td>1.7 (p=0.067)</td>
</tr>
<tr>
<td><strong>Sleep amount</strong></td>
<td>34; 5.7 (3)</td>
<td>6; 7.5 (2.1)</td>
<td>1.8 (p=0.163)</td>
</tr>
<tr>
<td><strong>Sleep quality</strong></td>
<td>30; 5.7 (3.1)</td>
<td>10; 6.7 (2.5)</td>
<td>1 (p=0.57)</td>
</tr>
<tr>
<td><strong>Diet quality</strong></td>
<td>22; 4.8 (3)</td>
<td>18; 7.3 (2.1)</td>
<td>2.5 (p=0.005)***</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th></th>
<th>Yes (n); Perceived Stress Mean (SD)</th>
<th>No (n); Perceived Stress Mean (SD)</th>
<th>Difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVID-19 increased stress</strong></td>
<td>34; 6.1 (2.8)</td>
<td>6; 5.2 (3.8)</td>
<td>0.9 (p=0.485)</td>
</tr>
<tr>
<td><strong>COVID-19 increased anxiety</strong></td>
<td>27; 6.3 (2.8)</td>
<td>13; 5.2 (3.1)</td>
<td>1.1 (p=0.288)</td>
</tr>
<tr>
<td><strong>COVID-19 increased sadness</strong></td>
<td>22; 7.1 (2.4)</td>
<td>18; 4.5 (2.9)</td>
<td>2.6 (p=0.003)***</td>
</tr>
</tbody>
</table>
Conclusions

• RN’s may be at risk for increased stress and well-being may suffer related to COVID

• Preliminary trends in our sample were uncovered between higher stress and worse dietary habits as well as increased sadness related to the pandemic
• The health of the nursing workforce is crucial to ensure adequate care for the sick in the community

• Future studies should explore relationships between health habits and physical/emotional health over time in this population
Questions?

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Select References: