Nursing emotional health before and during COVID-19 hospital surges

Marietta Sperry, DNP, MSN, RN
Ellen Romesburg, BSN, RN
Teresa Bigand, PhD, MSN, RN
Marian Wilson, PhD, MPH, RN
Lois James, PhD
To investigate relationships between working in the hospital before and during the COVID-19 pandemic, turnover rates, and nursing self-reported emotional health
Background

(Photo from Swayoffice.com)
Nursing Stress Levels

Related occupational factors

• Nurses working in hospital settings reported high levels of work-related stress and burnout related to patient acuity levels and short staffing
  • Rates have further worsened in the context of the COVID-19 pandemic.
  • Burnout and stress levels are highly correlated and often are cited as reasons for nurse turnover
  • National nurse turnover rates increased to 19% in 2020 compared to 16% in 2019
Methods
Data Combined from Two Studies

**Study 1: Nursing Fatigue**
Conducted February 2018 – February 2020

- 50 12-hour day shift and 50 12-hour night shift recruited from two hospitals in Eastern WA
  - Nurses completed tests following 3, 12-hour shifts and 3 days off work
  1. Measures collected = Perceived Stress (PSS), Scale of Positive and Negative Experience (SPANE), Karolinska Sleepiness Scale (KSS)

**Study 2: Nurse Health Habits during COVID**
Conducted October 2020 – October 2021

- 35 12-hour day shift and 35 12-hour night shift nurses recruited from 10 hospitals in same system
  - Nurses documented Perceived Stress, Positive and Negative Affect, and COVID-related anxiety, sadness and stress (author-created Likert items) prior to documenting health habits
  - Sleep, exercise, and diet were recorded for 7 consecutive days including 3, 12-hour shifts and 4 days off work
  1. KSS collected after each 12-hour shift during the 7-day study period
Study Measures

- KSS – 1-item rate sleepiness from 1 (extremely alert) to 9 (fighting sleep)
- Perceived Stress Scale – 4 item short form
  - 0 (no stress) to 16 (highest stress) in past 7 days
- PANAS: 20-item scale; 5-point Likert with 10 measuring “positive” and 10 “negative
  - Positive ranges from 10 (very low positive affect) to 50 (high positive affect). Inverse for negative mood
- SPANE: 12-item scale; 6 positive and 6 negative traits
  - Subscales range from 6-30
  - SPANE and PANAS are correlated (0.3-0.55)
- 3 Likert scale items on impacts of COVID on mood
  - Positive if “agree” or “strongly agree”
Results
## Baseline Comparability: Demographics

<table>
<thead>
<tr>
<th></th>
<th>Study 1 ($n = 91$)</th>
<th>Study 2 ($n = 57$)</th>
<th>$p$ - value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N$ (%)</td>
<td>$N$ (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7 (7.7%)</td>
<td>10 (17.5%)</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Days</td>
<td>47 (51.6%)</td>
<td>33 (57.9%)</td>
<td>&gt;0.05</td>
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<tr>
<td>BSN+</td>
<td>70 (76.9%)</td>
<td>48 (84.2%)</td>
<td>&gt;0.05</td>
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<tr>
<td>30 or younger</td>
<td>31 (34.1%)</td>
<td>18 (31.6%)</td>
<td>&gt;0.05</td>
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</table>
Increases observed in nursing stress and turnover rates

- PSS-4 scores significantly higher among nurses working in the same health system sampled during COVID ($m = 5.9$) versus before ($m = 4.1$, $p < 0.001$)

- Turnover rates in the same system increased from the pre period (2018-2019) compared to the post period (2020 – 2021)

- National nurse turnover rates closely match this health system’s rates (15% pre to 19% post)
Levels of Stress, Mood, and Sleepiness

<table>
<thead>
<tr>
<th>Averages</th>
<th>Positive Mood (SPANE-P or PANAS-Positive)</th>
<th>Negative Mood (SPANE-N or PANAS-Negative)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre $m = 20.0$</td>
<td>Pre $m = 8.1$</td>
</tr>
<tr>
<td></td>
<td>Post $m = 32.0$</td>
<td>Post $m = 19.1$</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pearson's Correlation Coefficient</th>
<th>Positive Mood</th>
<th>Negative Mood</th>
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</thead>
<tbody>
<tr>
<td>Stress</td>
<td>Pre $r = -0.35$</td>
<td>Pre $r = 0.32$</td>
</tr>
<tr>
<td></td>
<td>Post $r = -0.49$</td>
<td>Post $r = 0.51$</td>
</tr>
</tbody>
</table>

- Nonsignificant increase in post-shift KSS scores pre-COVID ($m=3.8$) to post-COVID ($m = 4.1$, $p > 0.05$)
Discussion
Important Considerations

No causation should be implied
• Possibility for a potential relationship between stress, burnout and turnover but need a more rigorous study.
• Limitations:
  1. Didn’t look at the whole Providence organization
  2. Samples were not same participants
  3. Other time point issues – surges waxed and waned

Other factors for turnover could include:
• Incentives from other entities (ex: travel nursing, sign-on bonuses)
• Other reasons not related to stress or burnout
Personal Experience

- Pediatric Continence Center
- Very small, outpatient clinic
- Located next to COVID unit on L2 East
- 3 nurses
- Hourly changes to policies and protocols
- Fielding calls from concerned families
- Eventual closing of department for 3 months
- Repurposed into other positions in hospital
- Feelings of patient abandonment, financial insecurities
- Uncertainty, worry, increased stress
Conclusion

- Nurses working full-time, 12-hour shifts during the COVID pandemic are experiencing increased stress and worse mood, while simultaneously, overall nursing turnover rates increased compared to before the COVID pandemic.

- Higher levels of stress are related to worse mood for nurses during both conditions and stronger relationship noted in the COVID-19 group.
Clinical Implications
Clinical Application

• Providing hospital-based nursing care is demanding.

• Nursing leaders need to advocate for evidence-based resources to foster emotional well-being of nurses, regardless of whether hospitals are acutely experiencing increased acuity and critical staffing.

• Future work should explore strategies to help acute care nurses manage emotional health while promoting retention.
Thank you
References


