MINDFULNESS-BASED INTERVENTIONS FOR STAFF NURSES:
A SYSTEMATIC REVIEW AND META-ANALYSIS

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“Nurses must have self-care and compassion for themselves so that they can care compassionately for their patients.” —Jean Watson
Nurses

* the highest number of health care personnel globally
* inherently exposed to multidimensional work-related stress on their daily work environment
* escalation of burnout and stress may result to extreme cases of depression and plan to quit their work
BACKGROUND:

- Mindfulness-based interventions
  - **Mindfulness**- Buddhist practice; “moment-by-moment awareness”; “non-judgmental attention to experiences in the present moment” (Kabat-Zinn, 1990)
  - **Attributes:**
    a. Attention regulation- “taking notice”
    b. Body awareness- “conscious registration of stimuli”
    c. Emotion regulation
    d. Change in perspective of the self (Holzel et al., 2011)
  - **Five(5) Mindfulness-based Interventions**- a.) Mindfulness-based stress reduction; b.) Mindfulness cognitive-behavioral therapy; c.) Dialectical behavior therapy; d.) Acceptance and commitment therapy; and e.) Mindfulness-based relapse prevention (Simkin & Black, 2014).
PURPOSE STATEMENT:

The aim of the synthesis is to evaluate the effects of mindfulness-based interventions on different outcomes because there are few studies that translate knowledge on mindfulness practice for staff nurses.
**PICOTS question**

**Population (P):** working staff nurses in the hospital

**Intervention (I):** mindfulness-based interventions (MBIs)

**Comparator (C):** no intervention/wait-list/other intervention

**Outcome (O):**
- **Primary:** decrease burnout, relief of stress, depression and anxiety
- **Secondary:** quality of life, improve patient care

**Time (T):** any length of time

**Study design (S):** pre/post design, wait-list, randomized controlled trial
METHODS:

Inclusion Criteria:
✓ staff nurses working in the hospital
✓ used mindfulness-based intervention
✓ English language
✓ mindfulness variation

Exclusion Criteria:
✗ nursing students
✗ mixed health care providers
✗ without mindfulness intervention in the regimen provided
LITERATURE SEARCH (April 2018)

PsychInfo
Francis & Taylor
JSTOR
Cochane Central
Pubmed
EMBASE
EBSCOHOST
Elsevier

Wiley Online
Library
Springer
Semantic Scholar
Google scholar
Gale Cengage
Learning
DOAJ

NCBI
Proquest
Clinical Key
Science Direct
Bibliographic search and reference list of various articles
SEARCH TERMS:

- mindfulness meditation
- mindfulness-based intervention
- loving-kindness meditation
- meditation
- yoga
- mindfulness
- transcendental meditation
- mindfulness-based stress reduction
- mindfulness-based cognitive therapy
# Preferred Reporting Items For Systematic Reviews And Meta-analyses (PRISMA)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total literature searched</td>
<td>1156</td>
</tr>
<tr>
<td>→ 1050 Duplicates removed and screened for applicability</td>
<td></td>
</tr>
<tr>
<td>Abstract and title screening</td>
<td>86</td>
</tr>
<tr>
<td>→ 66 Excluded articles: nursing students, mixed health care team, and mindfulness survey without interventions</td>
<td></td>
</tr>
<tr>
<td>Considered for Systematic Review and Meta-analysis</td>
<td>20</td>
</tr>
</tbody>
</table>
1. Author:
2. Year:
3. Country:
4. Jadad score:
5. Study design:
6. Number of participants:
   a. Enrolled:
   b. Completed:
7. Setting:
8. Intervention:
   • Frequency:
   • Duration:
9. Control:
   • Frequency:
   • Duration:
10. Measurement Scale:
11. Demographics:
12. Age:
13. Gender:
14. Position:
15. Years of experience:
16. Findings
1. 
2. 
3. 
4. 
5. 
17. Limitations and Observations
1. 
18. Statistical Analysis:
<table>
<thead>
<tr>
<th>Author (year, country)</th>
<th>Study Design</th>
<th>No. of participants enrolled (included in analysis)</th>
<th>Setting</th>
<th>Intervention - Duration and Frequency</th>
<th>Control - Duration and Frequency</th>
<th>Measurement scale / outcome measure</th>
<th>Demographics (age, gender, position and work experience)</th>
<th>Findings</th>
<th>Limitations and Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander et al. (2015, USA)</td>
<td>Randomized controlled trial pre-post intervention</td>
<td>n=40(40)</td>
<td>Hospital-based</td>
<td>8 weeks yoga intervention</td>
<td>Usual care</td>
<td>1. Health Promoting Lifestyle Profile II 2. Freiburg Mindfulness Inventory 3. Maslach Burnout Inventory</td>
<td>46 years is the mean age, female 98%, 14 years average of work experience</td>
<td>Self-care (p&lt;.001), mindfulness (p=.028), emotional exhaustion (p=.008), and depersonalization (p=.007)</td>
<td>Small sample size, lack of an active control group, self-report measures</td>
</tr>
<tr>
<td>Bazarko et al. (2013, USA)</td>
<td>One group non-randomized pre/posttest intervention</td>
<td>n=41(36)</td>
<td>Hospital-based</td>
<td>8 weeks MB SR. combined classroom and telephonic delivery - retreat, teleconference and self-practice</td>
<td>None</td>
<td>1. Perceived Stress Scale 2. Copenhagen Burnout Inventory 3. SF-12v2 Health Survey 4. Brief Serenity Scale 5. Jefferson Scale of Physician Empathy - validated for nurses 6. Self- compassion Scale</td>
<td>Mean age 52 years, 100% female,</td>
<td>Post-intervention, there was significantly decreased stress (p&lt;.001), and burnout. Change in health measured by the SF12v2 was observed to have improved including general health, vitality, social functioning, mental health, physical component, and mental component. Improved serenity (p&lt;.001), empathy (p&lt;.001), self-compassion (p&lt;.001)</td>
<td>Continued education credits and money were given to participants, self-selected, all females, self-report data</td>
</tr>
</tbody>
</table>
SUMMARY OF CODED STUDIES:

- Country: USA: 12, Taiwan: 1, Portugal: 1, South Korea: 1, Brazil: 1, China: 1, Norway: 1, Canada: 1, Israel: 1
- 8 randomized controlled trial studies
- Samples from each study range from 8 to 160
- 951 total of participants
- Nurses: ICU, oncology and others are mixed; 100% women-8 studies; mostly women (90% and above)- 9 studies
- Recruitment: advertisements, monetary incentive, received 4-hour shift as compensatory time, and continued education credits
SUMMARY OF CODED STUDIES:

**Intervention characteristics**

- yoga intervention (Alexander et al., 2015; Fang et al., 2015);
- MBSR program (Duarte et al., 2017; Wang et al., 2017);
- MBSR-combined classroom and telephonic delivery-retreat, teleconference and self-practice (Bazarko et al., 2013);
- relaxation response and breathing exercise (Calisi, 2017);
- Kouksundo (Korean Meditation) (Chang et al., 2016);
- stress management (Cohen-Katz et al., 2005);
- healing rhythms meditation, computer-guided, and meditation training program (Cutshall et al., 2011);
- reiki, yoga, and meditation (Deible et al., 2015);
SUMMARY OF CODED STUDIES:

Intervention characteristics

✓ mindfulness and loving-kindness meditation (dos Santos et al., 2016);
✓ guided mindfulness meditation (Gauthier et al., 2014);
✓ mindfulness training program (Horner et al. 2014);
✓ mindfulness and relaxation exercise- daily lectures, counseling, and informal gatherings and discussion (Isaksson Rø et al., 2010);
✓ educational workshop, written sessions, counseling, MBSR and aerobic exercise (Mealer et al., 2014);
✓ mindfulness meditation course (Pipe et al., 2009);
✓ imagery and progressive muscle relaxation (Poulin et al., 2008);
✓ cognitive interventions and learning stress reducing behavioral skills (Sarid et al., 2010); and
✓ smartphone application, Head space, an audio-guided mindfulness meditation program (Wylde et al., 2017)
Effects Of Mindfulness-based Interventions (MBIs) On Nurses:

❖ improved stress relief (Bazarko, Cate, Azocar, & Kreitzer, 2013; Gauthier, Meyer, Grefe, & Gold, 2014),
❖ reduced anxiety (Cutshall et al., 2011),
❖ improved coping (Deible, Fioravanti, Tarantino, & Cohen, 2015),
❖ improved self-care (Alexander, Rollins, Walker, Wong, & Pennings, 2015),
❖ reduced symptoms of depression (Mealer, Conrad, Evans, Jooste, Solyntjes, Rothbaum, & Moss, 2014),
❖ advances in mindfulness: telehealth mindfulness intervention (Bazarko, Cate, Azocar, & Kreitzer, 2013) and smartphone-delivered mindfulness intervention (Wylde, Mahrer, Meyer, & Gold, 2017).
The low sample size of many studies pose a bias for representation and low generalizability due to variations of intervention, length of implementation and observed high attrition rate.

**Decision**: *Random effects model* versus Fixed effect model
Comprehensive Meta-analysis (CMA): Burnout (Maslach Burnout Inventory)

* confidence intervals have wider interval reflecting a poor precision
* spurious effect
* overall effect favors the intervention
Test of Heterogeneity

*Test for Heterogeneity = assess the studies are comparable; “mixing oranges and apples”
*Results are comparable or homogenous

<table>
<thead>
<tr>
<th>Model</th>
<th>Effect size and 95% confidence interval</th>
<th>Test of null (2-Tail)</th>
<th>Heterogeneity</th>
<th>Tau-squared</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Model</td>
<td>Number Studies</td>
<td>Point estimate</td>
<td>Standard error</td>
<td>Variance</td>
</tr>
<tr>
<td>Fixed</td>
<td>6</td>
<td>0.431</td>
<td>0.092</td>
<td>0.009</td>
</tr>
<tr>
<td>Random</td>
<td>6</td>
<td>0.431</td>
<td>0.092</td>
<td>0.009</td>
</tr>
</tbody>
</table>
Publication Bias
*funnel plot is slightly symmetrical which indicates minimal publication bias.
Limitations of included studies:

- lack of control group
- participants self-select
- small number of participants
- lack of follow-up
- reliance on self-report measures
- time constraints
- poor adherence and participation
- difficulty starting a new habit on performing mindfulness
- lack of randomization
- overlap in principles and techniques
- multimodal programs on mindfulness
CONCLUSION:

The meta-analysis in line with burnout as an outcome measure after mindfulness-based intervention for nurses may reveal beneficial effects.

Moreover, empowering professional nurses through mindfulness-based interventions will better equip them to act with more awareness in patient care and attention to nursing practice.
REFERENCES:


THANK YOU! 😊

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