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Research brief

A brief mindfulness-based stress reduction intervention for nurses and nurse aides

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Abstract Whereas the causes and negative consequences of stress among nurses are well known, less is known about effective ways to reduce or prevent this growing problem. Mindfulness-based stress reduction programs are proving to be effective in reducing stress and improving health in a variety of clinical populations. A smaller body of evidence suggests that these programs are also effective for nonclinical populations at risk for stress-related health problems. This study involved the development and evaluation of a brief 4-week mindfulness intervention for one such group—nurses and nurse aides. In comparison with 14 wait-list control participants, 16 participants in the mindfulness intervention experienced significant improvements in burnout symptoms, relaxation, and life satisfaction. The results of this pilot study, together with a natural fit between mindfulness philosophy and nursing practice theory, suggest that mindfulness training is a promising method for helping those in the nursing profession manage stress, even when provided in a brief format.

1. Introduction

In light of the current shortage of nurses and predicted worsening of this problem in North America and other parts of the world (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002), stress and burnout are serious and growing concerns for nurses, patients, and health care institutions. Whereas the consequences of stress among nurses are well known (see McVicar, 2003), comparatively less is known about effective methods of addressing this problem. This pilot study focused on a relatively new and promising stress reduction intervention—mindfulness training. *Mindfulness* can be defined as "paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). It requires attentional regulation and an orientation to experiences characterized by present-moment curiosity, openness, and acceptance (Bishop et al., 2004).

Over the last two decades, a growing body of evidence has suggested that the mindfulness-based stress reduction (MBSR) programs have significant prophylactic effects for a variety of clinical populations, ranging from patients with cancer and chronic pain to those with mental health problems (for reviews and meta-analyses, see Baer, 2003; Grossman, Niemman, Schmidt, & Walach, 2004). Although healthy nonclinical populations have received relatively little attention in the MBSR literature, the potential benefit of mindfulness training for nurses has been raised recently (e.g., Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2004; Henry & Henry, 2003) because they are at risk for stress-related burnout and because of the theoretical match between mindfulness and nursing theory and practice (e.g., Benner, 2000; Parse, 1995; Watson, 1994). The humanistic caring paradigm espoused by the dominant nursing theories requires nurses to develop a deep personal and interpersonal understanding and sensitivity to provide effective care and avoid compassion fatigue. One way to achieve understanding and sensitivity is by practicing the tenets of mindfulness, including awareness of the present moment, nonjudging acceptance, patience, and kindness (Henry & Henry, 2003).

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Table 1
Participant age and frequency of other demographic characteristics

Demographic variables	Control group (N = 14)	Intervention group (N = 16)
Age in years [*M* (*SD*)]	44.78 (8.16)	48.62 (6.52)
Sex		
Male	0	1
Female	14	15
Marital status		
Never married	6	5
Married	7	6
Divorced	1	5
Job title		
Registered Nurse	7	11
Registered Practical Nurse	3	2
Nurse Aide	4	3
Shift worked		
Days	4	8
Evenings	3	2
Nights	4	2
Flexible	3	4
Work status		
Full time	4	5
Part time	10	11

Two intervention studies with nursing students have shown that mindfulness improved subjective physical and mental health, empathy, and well-being (Beddoe & Murphy, 2004; Young, Bruce, Turner, & Linden, 2001). However, mindfulness has yet to be examined with practicing nurses and nurse aides, perhaps because of the substantial 8-week 52-hour time commitment required of MBSR participants. The intensity of this intervention is likely to be aversive to many individuals who work and live under high levels of stress; it also limits opportunities to offer on-the-job mindfulness training, especially in shift-work occupations.

The purposes of this study were to address the relative dearth of research on mindfulness training with nonclinical populations in general and practicing nurses and nurse aides specifically, and to describe and evaluate the efficacy of a brief version of the traditional MBSR program. We hypothesized that, compared with wait-list control participants, participants receiving mindfulness training would experience (1) decreased burnout symptoms, (2) increased feelings of relaxation, (3) increased satisfaction with their jobs and life in general, and (4) increased ability to view life as meaningful, comprehensible, and manageable (i.e., sense of coherence).

2. Materials and methods

2.1. Design and participants

Nurses and nurse aides were recruited from long-term and complex continuing care units in a large urban geriatric teaching hospital and randomly assigned to intervention or wait-list control groups. Because the study was conducted during the summer, however, several exceptions were made to accommodate participants' vacation schedules and additional control participants were recruited. Sixteen nurses and nurse aides completed the brief MBSR program and provided preintervention and postintervention ratings. Fourteen control participants from the same care units completed outcome measures while on a wait-list for

Program Component	Week 1	Week 2	Week 3	Week 4
Theme	Disengaging the automatic pilot	Dealing with barriers	Attachment and aversion	Developing and maintaining your own practice
Exercises	Mindful eating	Mindful stretching	Mindful sitting with awareness of thoughts	Body scan
	Body scan	Mindful sitting with awareness of the breath	Three-minute breather	Mindful sitting with awareness of breath and thoughts
Homework	Body scan	Mindful stretching	Mindful sitting with awareness of thoughts	Continuing mindfulness practice
	Mindfulness of an everyday activity	Mindful sitting with awareness of the breath	Three-minute breather	
		Paying attention to practice barriers	Paying attention to likes and dislikes	

Fig. 1. Overview of intervention themes, exercises, and homework requirements.

the program. Participants' demographic information is shown in Table 1.

2.2. Intervention

The intervention is a shortened version of the traditional MBSR program that synthesizes its main elements, is congruent with its underpinning philosophy, and is easier to incorporate into nurses' work schedules. In developing this program, we were guided by the work of Kabat-Zinn (1990), Segal, Williams, and Teasdale (2002), and our own experience with mindfulness practice. The final manualized intervention consists of four 30-minute group sessions, each of which includes a didactic section and experiential exercises as outlined in Fig. 1. Each week, participants attended one of six sessions held during day and evening shifts to increase opportunities for access. Participants received a CD or audiocassette recording of guided mindfulness exercises, which they were instructed to practice for at least 10 minutes per day, 5 days per week. They also received a manual that summarized key points from the sessions and clarified homework requirements.

2.3. Outcome measures

Intervention participants completed a battery of questionnaires before and immediately after the 4-week training program. Control participants completed the questionnaires during the same period. The battery consisted of the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996), the Smith Relaxation Dispositions Inventory (Smith, 2001), the Intrinsic Job Satisfaction subscale from the Job Satisfaction Scale (Koeske, Kirk, Koeske, & Rauktis, 1994), the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), and the 13-item version of Antonovsky's (1987) Orientation to Life Questionnaire.

3. Results

The intervention and control groups did not differ on any of the demographic characteristics shown in Table 1 according to t tests and χ^2 analyses. We also examined the two groups for equivalence on each of the seven outcome measures prior to the intervention. The only significant preintervention difference was that intervention participants were more emotionally exhausted than control participants, $t(1, 27) = -2.82$, $p = .01$.

The effectiveness of the intervention was examined using 2 (groups) × 2 (times) repeated measures analyses of variance (ANOVAs), where the effect of interest is the Group × Time interaction. Separate ANOVAs examined the influence of the MBSR program on three components of burnout. First, with respect to emotional exhaustion, intervention participants were significantly more exhausted than control participants prior to beginning the program. As shown in Table 2, following the intervention, MBSR participants demonstrated reductions in exhaustion, whereas control participants' scores increased somewhat, resulting in a significant Group × Time interaction. Second, with respect to depersonalization, intervention participants showed relative stability over the two testing periods, whereas control participants' scores increased significantly, resulting in a significant Group × Time interaction. Third, with respect to job-related personal accomplishment, intervention participants reported higher levels than control participants both before and after mindfulness training, as indicated by a significant main effect of group, $F(1, 25) = 10.10$, $p = .004$. In addition, the training program had a positive influence on personal accomplishment, although the Group × Time interaction only approached significance ($p = .06$).

Table 2
Unadjusted means and indicators of the influence of mindfulness training on outcomes

Outcomes	Pretraining [M (SD)]	Posttraining [M (SD)]	Group × Time interaction (F)	Effect size (η_p^2)
Burnout				
Emotional exhaustion			4.96*	.16
Intervention group	26.38 (10.42)	20.67 (10.39)		
Control group	16.15 (8.76)	17.23 (10.62)		
Depersonalization			4.88*	.16
Intervention group	4.75 (4.49)	4.80 (4.43)		
Control group	3.42 (5.12)	5.00 (5.89)		
Personal accomplishment			3.92	.14
Intervention group	37.38 (5.86)	41.60 (3.25)		
Control group	33.42 (7.74)	33.33 (6.77)		
Sense of coherence			2.60	.09
Intervention group	58.06 (8.65)	65.62 (9.10)		
Control group	61.92 (7.65)	64.31 (6.32)		
Life satisfaction			7.07**	.21
Intervention group	24.50 (6.05)	27.31 (4.54)		
Control group	28.46 (5.41)	28.00 (5.63)		
Relaxation			4.52*	.15
Intervention group	35.33 (8.95)	43.56 (9.29)		
Control group	42.15 (9.94)	41.00 (11.89)		
Job satisfaction			0.84	.03
Intervention group	44.13 (8.38)	47.40 (6.65)		
Control group	45.50 (8.98)	45.92 (10.28)		

As a measure of effect size, partial η^2 refers to the proportion of variance accounted for, where .01, .06, and .14 represent small, medium, and large effects, respectively.

* $p < .05$.

** $p < .01$.

A fourth repeated measures ANOVA examined the effect of training on participants' sense of coherence. Both control and intervention participants' beliefs that challenging events are predictable, that they have the resources to meet challenges, and that those challenges are worthy of engagement increased from pretesting to posttesting, resulting in a significant main effect of time, $F(1, 27) = 9.60$, $p = .004$. This improvement was greater for intervention than for control participants, although the Group × Time interaction was not significant ($p = .12$). A fifth analysis examined whether mindfulness training influenced general well-being and life satisfaction. Following training, control

participants' scores remained stable, whereas intervention participants' scores increased, resulting in a significant Group × Time interaction. The results of a sixth analysis, examining the influence of training on self-reported relaxation, followed a similar pattern to that shown for life satisfaction. Following mindfulness training, control participants' ratings were stable, whereas intervention participants' relaxation ratings improved, resulting in a significant Group × Time interaction. A final analysis examined the effect of mindfulness training on job satisfaction. None of the main effects or interactions from this analysis was significant, although control and especially intervention participants' scores increased over time such that the main effect of time approached significance ($p = .06$).

4. Discussion

The results of this study support the feasibility and potential effectiveness of a brief mindfulness training program for reducing symptoms of burnout, enhancing relaxation, and improving life satisfaction for nurses and nurse aides. Although we did not find significant improvements in participants' sense of coherence or job satisfaction, the trends in the data for these outcomes were in the hypothesized direction.

The encouraging results of this pilot study should be considered in light of several limitations. First, the modest sample size limits generalizability and reduced statistical power. We note, however, that significant findings with a small sample suggests that the intervention had a powerful effect on participants, as indicated by large effect sizes for five of the seven outcomes (Olejnik & Algina, 2000). Second, the participants were a rather heterogeneous sample of nurses and nurse aides who worked part and full time on different shifts. Participants' varying levels of autonomy, control, and work responsibilities may have influenced stress, job satisfaction, and other study outcomes. Other non-work-related factors, such as social support, daily hassles, and existing stress reduction strategies, should also be assessed and controlled for in future mindfulness intervention studies with nurses and nurse aides. Third, it is not clear whether and how much additional improvement participants might have experienced from the traditional more intensive MBSR program. Although a comparison of our brief program with the traditional format would be informative, our concerns that the full MBSR program might be prohibitive for nurses and nurse aides who are already juggling multiple demands and time pressures were supported by the fact that, despite providing multiple brief sessions each week, attendance was difficult or impossible for many potential participants. Finally, we do not know what effect the intervention had in the months following the program's completion. We suspect that as participants continue to develop their mindfulness practices and integrate this new way of thinking into their everyday lives, greater improvement may be seen at follow-up periods.

In conclusion, this study highlights the potential of mindfulness training to be used with nurses and nurse aides to treat and prevent stress-related problems and to promote coping and health. It also suggests that training does not necessarily need to be implemented in the time-intensive format in which it is usually provided to benefit individuals with high levels of job stress. Although mindfulness training has largely focused on clinical populations, we believe that it may be particularly well suited to nurses and nurse aides, not only because they are in obvious need of stress reduction but also because mindfulness philosophy and nursing practice theories share a number of core values, such as the importance of fostering sensitivity, understanding, interconnectedness, and awareness of self and others.

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