RESEARCH ARTICLE

Building Personal and Professional Resources of Resilience and Agility in the Healthcare Workplace

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Abstract

This article describes the rationale, implementation and results of a pilot study evaluating the personal and organizational impact of an educational intervention on the stress of health team members. The compelling imperative for the project was to find a positive and effective way to address the documented stress levels of healthcare workers. Pilot study of oncology staff ($n = 29$) and healthcare leaders ($n = 15$) exploring the impact of a positive coping approach on Personal and Organizational Quality Assessment-Revised (POQA-R) scores at baseline and 7 months using paired *t*-tests. Personal and organizational indicators of stress decreased in the expected directions in both groups over the time intervals. The majority of POQA-R categories were statistically significantly improved in the oncology staff, and many of the categories were statistically significantly improved in the leadership group. The findings from this project demonstrate that stress and its symptoms are problematic issues for hospital and ambulatory clinic staff as evidenced by baseline measures of distress. Further, a workplace intervention was feasible and effective in promoting positive strategies for coping and enhancing well-being, personally and organizationally. Copyright © 2011 John Wiley & Sons, Ltd.

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Keywords

coping; coping strategies; leadership; organizational stress interventions/prevention; psychological well-being

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Introduction

The key role of healthcare leaders is to create and sustain an organizational environment that optimizes high-quality, safe and effective patient-centred care. The leader's role is not confined to ensuring the best possible physical environment but rather extends to providing an organizational culture that supports healthcare team members in the often stressful work of direct care provision (Pipe, 2008). A positive approach is to empower nursing staff and other health team members with effective skills and techniques to help them transform stressful situations into more therapeutic and efficient scenarios. Adopting effective personal stress management techniques can translate into better awareness of self and others and more effective communication and therefore into a safer patient care environment (Cohen-Katz et al., 2005; Minick & Harvey, 2003; Pipe, 2008; Pipe & Bortz, 2009). Perceived stress has been found to be a strong predictor of general health, number of unhealthy days, health limiting activities and ratings of work environment (Tucker, Harris, Pipe, & Stevens, 2010). Increasing the ability of healthcare providers to perform more efficiently under conditions of stress is a realistic way of adding to the value of health care.

Much has been documented about the stresses of the healthcare environment (Shirey, 2006; Shirey, Ebright, & McDaniel, 2008; Tucker et al., 2010), and although these stressors are real and valid, the solution to addressing them is not found in focusing only on the problems and retelling the stories of associated challenges. Shifting the perspective to optimize positive ways of coping is emerging as a more effective and efficient way of building resilience and agility. Resilience and agility are increasingly valuable because the healthcare environment is changing quickly and in uncertain ways. Resilience is the ability to adapt to life's ever-changing landscape and recover quickly from stressors and potential stressors. Agility is the ability to do so quickly and in a variety of situations (Tugade & Fredrickson, 2004; Tugade, Fredrickson, & Barrett, 2004).

The healthcare environment is fast paced and challenging. Decisions are important and often urgent and the stakes of communication, teamwork and

decision making are often very high. Although the challenges inherent in this work environment can be rewarding and exciting, if intense and experienced over a prolonged period, the challenge can deteriorate into stress, and performance can be negatively impacted (Shirey, 2006; Shirey et al., 2008). This decline can be compounded in professions where compassion and caring are part of the expected performance, unless measures are taken to restore and replenish vitality (Judkins, 2004; Pipe et al., 2009; Quinal, Harford, & Rutledge, 2009; Schultz & Beach, 1999).

Stress has been identified as an important issue for nurses and other healthcare leaders in previous research studies and employee surveys (IOM, 2004; NHS, 2009; Reineck & Furino, 2005; Scott, Hwang, & Rogers, 2006). In fact, stress has been implicated as a major contributing factor to poor communication and teamwork, a leading cause of sentinel events (Joint Commission, 2010). Stress has negative impacts on physical and emotional health (Aboa-Eboule et al., 2007; Chandola et al., 2008), productivity (Braithwaite, 2008; NHS, 2009), cognitive function (Mikels, Reuter-Lorenz, Beyer, & Fredrickson, 2008; Stuss & Levine, 2002) and overall well-being (Salmond & Ropis, 2005). All of these factors highlighted the importance to our organization of creating and sustaining a work environment where employees could learn and use positive and effective coping skills that would impact a safe, effective and highly satisfying care environment for patients.

This article will describe the rationale, implementation and results of a pilot study evaluating the personal and organizational impact of an educational intervention on the stress of health team members. The compelling reason for this project was the imperative to find a positive and effective way to address the documented stress levels of healthcare workers and the potential for stress-related adverse patient outcomes. This project was a proactive, interventional approach to improving the work environment through the enhancement of employee resilience and positive caring communication, thereby potentially improving patient safety through patient-centred care.

Background and rationale

The business case

There is a clear business case for addressing stress in the healthcare sector. Ineffective communication and lack of optimum teamwork among caregivers, in particular between nurse and physician, are the main root causes of sentinel events according to the Joint Commission (2010). The potential loss of one patient life or deterioration of a patient's condition due to ineffective communication is highly compelling and significant.

Sick leave costs the National Health Service £1.7bn a year, and reducing this by one-third would save over half a billion pounds annually (NHS, 2009). Another business driver is the cost avoidance of closing revenue-generating beds due to unplanned absenteeism or employee turnover related to stressful working conditions (a major reason nurses leave the bedside). One closed bed for 1 day is approximately the loss of at least $4000 based on one hospital's net revenue per adjusted patient day. The cost is much higher if the cost of increased supervisory time to find replacements is factored in. If the absent nurse is not replaced, the staff left behind to carry the load without the absent team member all experience an increased workload, thus incrementally increasing the stress in an already challenging work environment. By promoting stress reduction strategies, the environment can become more optimal, and the risk of closed beds due to employee absence or turnover is reduced. Recent studies of the costs of nurse turnover have reported results ranging from about $22,000 to over $64,000 per nurse turnover (Advisory Board Company, 1999; O'Brien-Pallas et al., 2006).

In addition, employee satisfaction may improve as well as the belief that the employer cares about their individual health. Less stressed employees listen better and are perceived as more caring and attentive to their patients, thus improving the patient experience and making it safer (Minick & Harvey, 2003). Patient satisfaction is also a strong motivator for building a resilient and caring workforce. When patients perceive that healthcare team members have enough time and focus to listen to their concerns and address their individual health needs from calm and centred presence, satisfaction is positively impacted.

Encouraging nurses and other health team members to extend compassion and care to patients and each other is a way of building a culture of care. Accessing genuine compassion can sensitize professional caregivers to perceive, recognize and process information in a systematic and empathetic way, guiding caring behaviours that support patients and families in their unique situation (Carter et al., 2008; Caruso, Cisar, & Pipe, 2008). Being present to patients in this deeper way fosters a helping–trusting authentic relationship that is instrumental in supporting a healing environment (Watson, 2009).

Building resilience

Positive psychology is an expanding field of science that focuses on building strength and resiliency. According to Fredrickson's 'broaden-and-build' framework of positive emotions, 'positive emotions broaden people's thought–action repertories, and by doing so build their enduring personal resources, including physical, intellectual, social and psychological assets' (Fredrickson, 2009; Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006).

Positive emotion is more than being happy. It is a deeper approach to how life is experienced. An aspect of optimism is positivity. Ten forms of positivity identified by Fredrickson (2009) include joy, gratitude, serenity,

interest, hope, pride, amusement, inspiration, awe and love. Optimism has many benefits for physical health, including improved immune function, lower levels of stress hormones, reduced inflammatory response to stress, lower blood pressure, reduced pain and better sleep (Brown et al., 2009; Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Waugh, Wager, Fredrickson, Noll, & Taylor, 2008).

A positive approach also changes how the mind works. Fredrickson theorizes that positivity broadens the possibilities that an individual can see and builds personal resources over time (Fredrickson, 2009). Fredrickson's (1998, 2009) broaden-and-build theory of positive emotions suggests a possible explanation for why this happens: when positive emotions arise in response to diffuse opportunities, rather than narrowly perceived threats, positive emotions can help broaden an individual's thinking, enabling them to draw on higher level connections and broader ranges of possibilities or ideas. These resources may be cognitive, psychological, social or physical. Individuals who use these resources effectively are more likely to take advantage of opportunities and effectively address challenges. In this way, as individuals use the resources gained, they may have a propensity to become more successful, healthier and happier all the time, adding momentum to the additional increments in well-being. 'Positive emotions widen people's outlooks in ways that, little by little, reshape who they are' (Fredrickson et al., 2008, p. 1045).

Specifically, highly optimistic individuals report being more receptive, more creative, making better decisions, having improved communication, making new connections, experiencing new ways of being and finding new learning opportunities. Repeated experiences of optimism build multiple personal resources over time, leading to resilience. Optimism interrupts negativity and short-circuits the harmful effects of negative thinking on the body. Finally, an overall positive approach can have a positive impact on relationships and the contribution to others. People who thrive not only enjoy life more; they also contribute in positive ways to the world around them (Fredrickson, 2009; Fredrickson & Losada, 2005).

The important aspect of this line of research and application is that the skills and mindset of positivity and optimism can be learned. The goal is not to eliminate negative thoughts completely but rather to increase the ratio of positive to negative thoughts and perceptions (Fredrickson, 2009). The intervention selected for this pilot study was designed to increase positive coping skills using a structured and standardized approach.

Purpose

The purpose of this article is to describe and report the outcomes of workplace stress management and resilience-building intervention that was implemented in a healthcare organization starting with nurses and other leaders and spreading to other employee groups. The strategy we used was specifically designed to help employees identify personal reactions to stress and teach them ways of positive coping they could use at work and in their personal lives.

Conceptual framework and preliminary work

It was a nursing leadership priority in our organization to address the work environment with an intentional caring consciousness that also characterizes our care of patients. The conceptual model that guided the implementation was Jean Watson's Theory of Human Caring (Watson, 2009). Watson's theory emphasizes the importance of caring for self, colleagues and others as a means to bringing about a more healing environment. Thus, we wanted a practical, in-the-moment approach to building resilience that would appeal to a wide spectrum of nurses and other employees. It was also important that the approach we chose was evidence based and effective. The programme described in this article started as a retention strategy, and as the economy worsened, it became more important as a morale and productivity-sustaining intervention.

This project builds on previous programmes that we developed and implemented to help employees identify and successfully manage stress and build personal resiliency resources. The results of the first programme, which involved mindfulness meditation training, have been published elsewhere (Pipe et al., 2009; Pipe & Bortz, 2009). In the previous study, we identified that stress, depression and anxiety were significant issues for nurse leaders and that a 4-week mindfulness training programme was feasible and had positive outcomes.

This initiative was built around some of the lessons we learned in the first study, including that we

- needed to offer a variety of approaches for our employees since their needs and preferences vary widely
- wanted to focus more on building resiliency and positive personal resources
- wanted to test the feasibility of teaching primarily in groups comprised of work units and teams

Objectives and outcomes

The objectives of this programme were to help the participants maintain physiological and emotional balance, improve communication effectiveness, and enhance decision making, while supporting the needs and concerns of coworkers and patients and reducing the potential for errors related to communication. Specifically, the expected outcomes for this programme were to

- reduce staff stress
- improve teamwork and communication

Longer term organizational outcomes were identified as well, although they are beyond the scope of evaluation for the current project. Longer term outcomes are to

- reduce errors, improve safety and quality of care
- increase employee and patient satisfaction
- transform work culture and improve morale
- improve staff retention and reduce new hire drop-out rate
- prevent closure of revenue-generating hospital beds due to absenteeism and turnover

The aims of the current project were accomplished by following a structured protocol that included the following:

- training for workshop facilitators
- sustainability and quality assurance modules to ensure the desired outcomes
- measurement tools to determine the programme's effectiveness
- a two-part workshop for participants
  - Transforming Stress workshop (4–5 h), plus
  - Level 5 coherence session (either 2 or 3 h) 2–3 weeks later

Materials and methods

Sample and participant selection

For the Phase 1 pilot, the sampling frame consisted of staff, primarily nurses, on a specified inpatient hospital unit (haematology/oncology) ($n = 63$) and a selected group of clinical managers, supervisors and educators from the hospital and ambulatory clinics ($n = 37$). Participants were recruited by emails, newsletters and informational presentations. The research aspects of the study were explained in the written descriptions and verbally during the first educational session as specified by the Institutional Review Board (IRB)-approved protocol. Participation was voluntary and open to nursing staff from the specified unit and clinical leaders. The primary inclusion criterion was employment and working on the units or in the positions specified. There were no exclusion criteria, and the project was deemed minimal risk by the IRB.

Intervention

The nursing leadership team decided to test an approach to positive coping and resiliency, which is a structured educational programme designed to teach individuals to recognize their stress symptoms and to use learned skills to counteract the negative effects of stress (Institute of HeartMath, IHM®). There are several techniques that are taught in a workshop format. The techniques are based on behavioural interventions that focus on improving self-regulation of physiological responses through several approaches that can be used 'in the moment' and throughout the day. The programme also offers participants the opportunity to use heart rate variability feedback, which is designed to help individuals learn to self-generate a healthier physiological state referred to as 'coherence'.

The intervention consists of two workshop sessions, the 'Transforming Stress' and 'Level 5' workshop. The Transforming Stress session is a 5-h course that focuses on the impact of stress on the body–mind–spirit and several techniques for learning how to better self-regulate stress responses by shifting into a more coherent physiological state. Participants were also given use of an emWave heart rate variability technology (HeartMath LLC, Boulder Creek, CA, USA), which helped them learn how the techniques were impacting their stress responses. Participants were encouraged to practise with the techniques and technology both at home and at work. The second 'Level 5' workshop is a 2-h session that builds on the basic techniques and provides participants the chance to ask questions and get helpful pointers about using the techniques. The techniques have been described in more detail elsewhere (Childre & Rozman, 2005; Cryer, McCraty, & Childre, 2003).

The implementation of this project was accomplished in several phases that are described below:

Phase 1 was a pilot test of the intervention. The results of the pilot test are included in this article. The initial pilot programme targeted staff nurses on a specified inpatient hospital unit and a selected group of hospital and clinic leaders, including clinical managers, supervisors and educators. This phase was based on previous study (Pipe, et al., 2009) and was our chief nurse's executive leadership project. We obtained IRB approval for the pilot study and subsequently applied for and obtained internal clinical innovation funding from our organization.

External facilitators conducted the workshops for the two pilot groups (inpatient oncology unit staff and leaders/managers). The workshop for each group was delivered in two sessions approximately 3 weeks apart. The first session was 5 h; the second session was 2 h.

Programme effectiveness was assessed through analysis of pre-training and post-training measurements. Based on initial outcomes, we sought and received IRB approval for extending the time intervals for measuring sustainability. Therefore, we have three measurement intervals for the pilot groups: baseline, 2-week and 7-month outcomes.

Phase 2 built on the workflows and results in the pilot test (Phase 1) and included sending four internal employees to learn how to teach the intervention so we could build an internally sustainable programme for the workplace. Internal employees went through the week-long IHM HeartMath training and became certified trainers. Internal training is accomplished by

two-person teams who colead the sessions. We also garnered administrative assistance for scheduling training sessions, completing online registration, reserving conference rooms and organizing the inventory of training materials. Phase 2 also included continuing to provide the intervention to more nursing units and other non-nursing work units. We continued to measure programme outcomes using a pre-testing and post-testing format at baseline and 2 to 3-week post-initial training.

Phase 3 of the project is currently underway, focusing on preserving the high-performance outcomes, sustainability practices and continuing to increase the number of employees who have taken the workshop and practise the skills. We are also exploring other potential populations and ways of optimizing the intervention.

Assessments and measures

The Personal and Organizational Quality Assessment-Revised (POQA-R) is an 80-question survey that measures physical stress symptoms, psychological health, resilience, emotional competencies, organizational climate and work performance. The Personal and Organizational Quality Assessment was created by IHM, and is a validated assessment tool designed to provide an overview of personal and job-related constructs. Two primary seven-point scales are used in the POQA-R, one asks about how frequently an item is experienced, ranging from 'not at all' to 'always'. The other scale asks how much one disagrees or agrees with a particular statement, ranging from 'strongly disagree' to 'strongly agree'. Standardized scores enable comparisons of individual or aggregate scores with those of pertinent reference groups. The POQA-R instrument captures self-reported changes in 24 categories of personal and organizational quality. Examples of these constructs are the following:

- personal: fatigue, anger management, distress and vitality
- physical stress symptoms: inadequate sleep, body aches, rapid heartbeats
- job related: satisfaction, productivity, clarity, communication and social support

Administration

For the first measurement interval at baseline, the POQA-R was administered at the start of the first 'Transforming Stress' workshop session. Participants completed the self-report instrument in the classroom and placed their questionnaires in a large envelope at the back of the classroom. For the follow-up measures, the questionnaires were sent out by interclinic mail and returned to a centralized location in the hospital administration.

Analysis

The POQA-R was analysed as a single instrument with subscales that relate primarily to personal or organizational aspects of stress. The 80 items were grouped into constructs such as 'positive outlook', 'gratitude', 'motivation', etc. for the purposes of helping organizations translate the results into meaningful, actionable findings. There was no adjustment for multiple measures since only one instrument was used.

Results

In the inpatient oncology group, 63 participants (59 female, 4 male) completed the first administration of the POQA-R survey, and 36 participants (33 female, 3 male) completed the 7-month post-intervention survey for a 57% return rate. Of those that completed both pre-intervention and post-intervention surveys, 29 (46% of the original sample) were able to be matched pre/post for the following analysis. The reason for the low number available for pairing is that we asked participants to put a code number rather than name on their questionnaires to keep the responses anonymous. However, many participants could not recall their code number when the follow-up survey was distributed. This was also true in the leadership group.

In the leadership group, 37 participants (29 female, 8 male) completed the first administration of the POQA-R survey, and 24 participants (21 female, 3 male) completed the 7-month post-intervention survey for a 65% return rate. Of those that completed both pre-intervention and post-intervention surveys, 15 (41% of the original sample) were able to be matched pre/post for the following analysis.

In the inpatient oncology group, 32 (69%) were married or partnered. In the leadership group, 88% were married or partnered. In the inpatient oncology group, ages were spread across the ranges fairly evenly: 28% were 21–30, 28% were 31–40, 16% were 41–50 and 28% were 51–60 years of age. In the leadership group, 20% were 21–30, 10% were 31–40, 52% were 41–50 and 18% were 51–60 years of age.

In the oncology group, 26% had some college, 39% had a bachelor's degree, 15% had some graduate education, 15% had a master's degree and 5% had a doctorate. In the leadership group, 8% had some college, 20% had a bachelor's, 8% had some graduate education and 64% had a master's degree.

Paired *t*-tests were used to analyse the time one and time two POQA-R data. Figure 1 depicts the results on the personal indicators of stress factors of the POQA-R from pre-intervention to 7-month post-intervention for the oncology staff. Statistically significant differences ($p < 0.001$) were found for each of the personal indicators (positive outlook, gratitude, motivation, calmness, fatigue, anxiety, depression, anger management, resentfulness and stress symptoms).

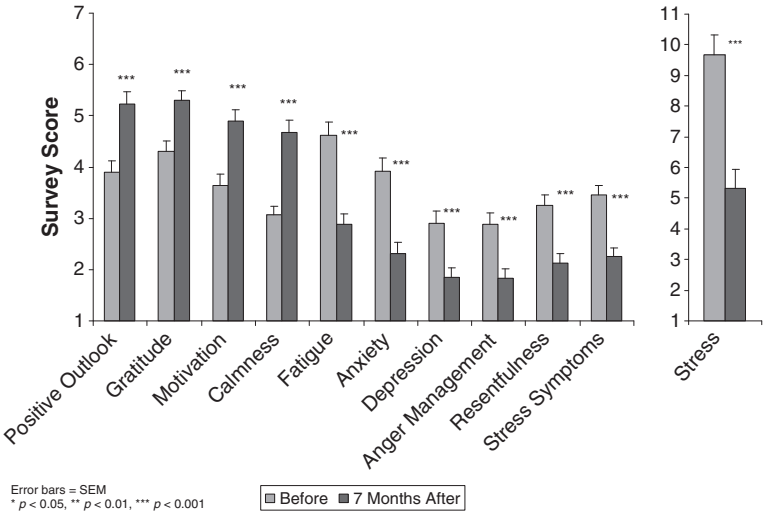

Figure 1 Oncology staff group, Personal and Organizational Quality Assessment-Revised matched pairs, baseline and 7-month post-intervention. Personal indicators of stress

Figure 2 depicts the results on the organizational indicators of stress factors of the POQA-R from pre-intervention to 7-month post-intervention for the oncology staff group. Although all of the indicators trended in the expected direction, statistically significant differences were found in the indicators of goal clarity ($p < 0.01$), productivity ($p < 0.001$), communication effectiveness ($p < 0.001$) and time pressure ($p < 0.001$).

Table I depicts the means and paired differences on each of the POQA-R indicators for the oncology staff group. The five metrics that recorded the highest level at the post-intervention measures were the following: work attitude, manager support, goal clarity, communication effectiveness and intention to quit. Those metrics that recorded the greatest changes were the following: goal clarity, communication effectiveness, productivity and time pressure.

Figure 3 depicts the results of the POQA-R on the personal indicators of stress factors for the leadership group from pre-intervention to 7-month post-intervention. Statistically significant differences were found in the personal indicators of gratitude ($p < 0.001$), fatigue ($p < 0.01$), depression ($p < 0.05$), anger management ($p < 0.01$), resentfulness ($p < 0.001$) and stress symptoms ($p < 0.01$).

Figure 4 depicts the results of the organizational indicators of stress factors on the POQA-R for the leadership group. Statistically significant differences between baseline and 7-month post-intervention were found on the indicators of manager support ($p < 0.05$) and value of contribution ($p < 0.05$). Table II depicts the means and paired differences on each of the POQA-R indicators for the leadership group.

Organizational measures

Although they were not measured as part of the pilot study, there are some organizational results that are of interest in terms of long-term goals. The following results should be interpreted with caution however, since many other initiatives were also in place simultaneously.

- Turnover on the oncology unit was 13.12% pre-intervention and 9.8% at the 7-month timeframe.
- Incremental time on the oncology unit dropped from 1.19 to 0.74 during the same time interval.
- Employee satisfaction survey scores for the unit went up on confidence that leadership responds to issues/concerns, organization takes genuine interest in employees' well-being, desire to continuously improve service on the unit, speak mind without fear, respect between physicians and allied health and overall satisfaction about work.
- For the organization as a whole, patient satisfaction with nursing care improved during the timeframe of the programme on the metrics of the following: responsiveness to patient needs and requests, nurses' communication, nurses' understanding and caring, promptness responding, instructions and explanations, overall quality of nursing care and overall teamwork between doctors, nurses and staff.

Discussion

The demographics of the participants reflect those of the overall organization, with a majority being female and highly educated. As we have rolled the educational programme out to the broader organization, more males have participated, but the classes consist mostly of females.

The results of both groups demonstrate the positive impact of the intervention on the personal and organizational indicators of stress. The strongest impact was seen in the oncology staff group, particularly on the

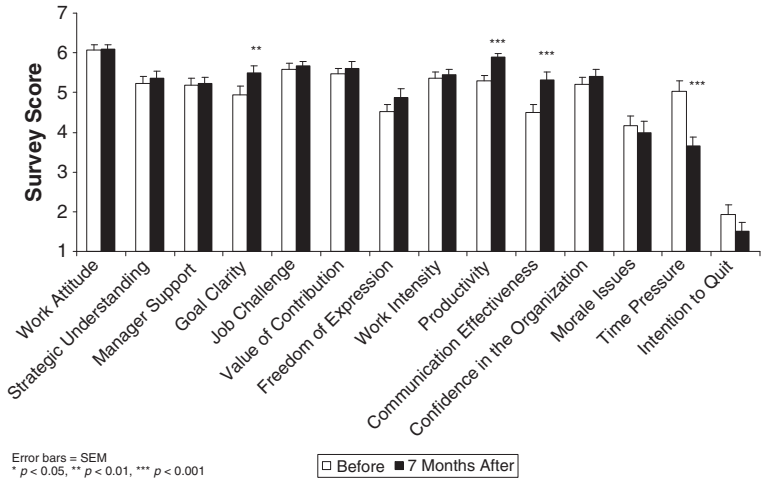

Figure 2 Oncology staff group, Personal and Organizational Quality Assessment-Revised matched pairs, baseline and 7-month post-intervention. Organizational indicators of stress

Table I. Matched pairs *t*-test Personal and Organizational Quality Assessment-Revised for oncology staff group baseline and 7-month post-intervention

	Before				After			Paired differences							
	N	Mean	SD	SEM	Mean	SD	SEM	Mean	SD	SEM	Lower 95% CI	Upper 95% CI	*t*	*p*<	SE
Positive outlook	28	3.89	1.22	0.23	5.23	1.23	0.23	1.34	1.03	0.19	0.94	1.74	6.92	0.001	1.10
Gratitude	29	4.31	1.08	0.20	5.30	1.01	0.19	0.99	1.15	0.21	0.55	1.42	4.65	0.001	0.95
Motivation	28	3.63	1.21	0.23	4.89	1.18	0.22	1.26	1.11	0.21	0.83	1.69	6.00	0.001	1.05
Calmness	29	3.06	0.94	0.17	4.68	1.25	0.23	1.61	1.03	0.19	1.22	2.01	8.46	0.001	1.48
Fatigue	29	4.62	1.35	0.25	2.89	1.04	0.19	−1.74	1.35	0.25	−2.25	−1.22	−6.93	0.001	1.45
Anxiety	29	3.92	1.41	0.26	2.30	1.20	0.22	−1.61	1.16	0.21	−2.05	−1.18	−7.52	0.001	1.23
Depression	29	2.90	1.36	0.25	1.84	1.04	0.19	−1.05	1.02	0.19	−1.44	−0.66	−5.54	0.001	0.88
Anger management	28	2.88	1.25	0.24	1.84	0.92	0.17	−1.04	0.99	0.19	−1.42	−0.65	−5.55	0.001	0.95
Resentfulness	29	3.24	1.13	0.21	2.13	0.99	0.18	−1.11	0.81	0.15	−1.42	−0.81	−7.42	0.001	1.05
Stress symptoms	29	3.45	0.99	0.18	2.26	0.87	0.16	−1.19	0.95	0.18	−1.56	−0.83	−6.77	0.001	1.28
Work attitude	29	6.07	0.67	0.12	6.09	0.69	0.13	0.02	0.79	0.15	−0.28	0.32	0.12	ns	0.03
Strategic understanding	29	5.23	0.99	0.18	5.36	1.02	0.19	0.13	0.94	0.18	−0.23	0.49	0.72	ns	0.13
Manager support	29	5.19	0.96	0.18	5.23	0.89	0.17	0.04	0.70	0.13	−0.23	0.30	0.29	ns	0.04
Goal clarity	29	4.93	1.30	0.24	5.49	0.93	0.17	0.56	1.06	0.20	0.16	0.97	2.86	0.01	0.50
Job challenge	29	5.58	0.83	0.15	5.67	0.64	0.12	0.09	0.51	0.10	−0.11	0.28	0.91	ns	0.12
Value of contribution	29	5.47	0.76	0.14	5.60	0.94	0.17	0.13	0.84	0.16	−0.19	0.45	0.81	ns	0.15
Freedom of expression	29	4.52	0.99	0.18	4.89	1.15	0.21	0.37	1.11	0.21	−0.05	0.79	1.79	ns	0.34
Work intensity	29	5.37	0.77	0.14	5.46	0.67	0.12	0.09	0.78	0.15	−0.21	0.39	0.61	ns	0.12
Productivity	29	5.30	0.71	0.13	5.89	0.48	0.09	0.59	0.56	0.10	0.37	0.80	5.63	0.001	0.98
Communication effectiveness	29	4.50	1.10	0.20	5.31	1.16	0.22	0.81	0.90	0.17	0.47	1.15	4.85	0.001	0.72
Confidence in the organization	29	5.21	0.94	0.17	5.40	0.96	0.18	0.20	0.83	0.15	−0.12	0.51	1.26	ns	0.21
Morale issues	29	4.17	1.28	0.24	4.00	1.55	0.29	−0.17	1.62	0.30	−0.79	0.44	−0.57	ns	0.12
Time pressure	29	5.03	1.36	0.25	3.66	1.16	0.22	−1.38	1.15	0.21	−1.82	−0.94	−6.46	0.001	1.09
Intention to quit	29	1.93	1.35	0.25	1.50	1.22	0.23	−0.43	1.19	0.22	−0.88	0.02	−1.95	ns	0.33
Stress	24	9.67	3.19	0.65	5.33	2.91	0.59	−4.33	3.46	0.71	−5.79	−2.87	−6.14	0.001	1.42

SD, standard deviation; SEM, standard error of the mean; CI, confidence interval.
Paired sample *t*-test.

personal indicators of stress. The leadership group also showed improvement and trends in the desired direction for each of the indicators, but not as many indicators were statistically significantly different at the post-intervention measurement. One explanation for this may be that the oncology unit has a cohesive

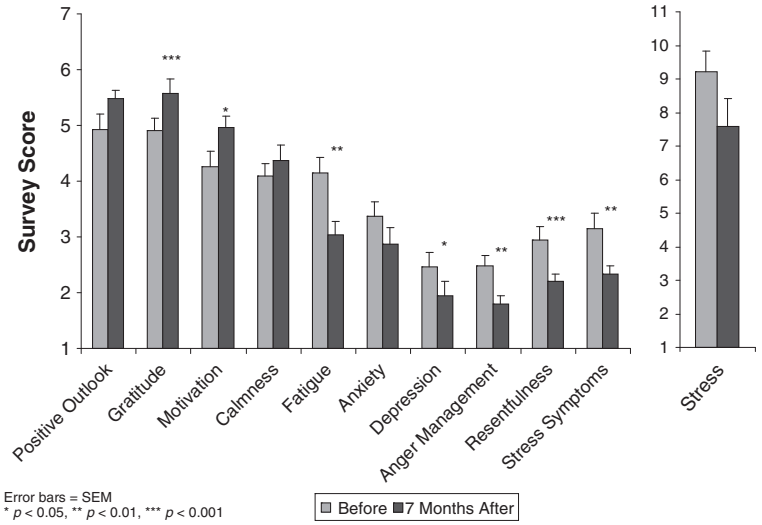

Figure 3 Leadership group, Personal and Organizational Quality Assessment-Revised matched pairs, baseline and 7-month post-intervention. Personal indicators of stress

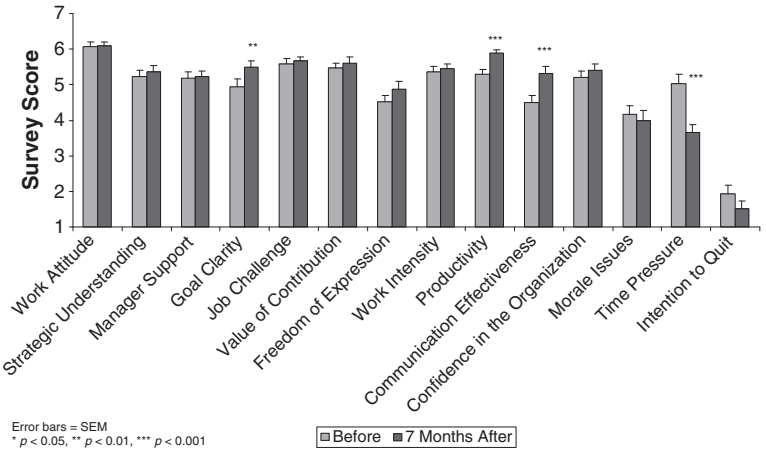

Figure 4 Leadership group, Personal and Organizational Quality Assessment-Revised matched pairs, baseline and 7-month post-intervention, Organizational indicators of stress

culture and the nurse manager intentionally focused efforts to sustain the intervention's effectiveness with the staff; the staff had a 'neighbourhood' of support. In contrast, the leaders worked in disparate work areas geographically and did not have the type of constant reminders and visibly supportive neighbourhood or social network. This finding is consistent with that of Linden, Jackson, Rutledge, Nath and Nelson (2010) who found positive effects of a similar intervention on fatigue, anxiety, depression, anger management, resentfulness and stress symptoms. It is also in keeping with a report by Wells (2010) documenting the positive and negative health behaviour influences of social networks on employees.

Watson's Theory of Human Caring (Watson, 2009) was the conceptual framework for the study and is very helpful in guiding the interpretation of the findings. As noted above, individuals in the group that practised together in a 'neighbourhood' of support demonstrated stronger outcomes than the group who did not. One possible explanation is the teaching from IHM that the electromagnetic field of the heart contains information that impacts those in proximity. In this case, the prevalent, positive and sustained 'coherence' of the individuals in the group with local support may be considered as contagious in a positive regard. This finding would be consistent with Jean Watson's theory in terms of how the caring affect and behaviour of one individual can impact others positively. This type of emotional contagion could have positive impacts for patients and families as well.

Both groups showed more impact on the personal than the organizational indicators of stress. One possible explanation of this is that individuals often notice the impact of stress on their personal well-being,

Table II. Matched pairs *t*-test Personal and Organizational Quality Assessment-Revised for leadership group baseline and 6-month post-intervention

	Before				After			Paired differences							
	N	Mean	SD	SEM	Mean	SD	SEM	Mean	SD	SEM	Lower 95% CI	Upper 95% CI	t	*p*<	SE
Positive outlook	15	4.93	1.03	0.27	5.48	0.60	0.16	0.55	1.03	0.27	−0.02	1.12	2.07	ns	0.67
Gratitude	15	4.91	0.84	0.22	5.58	0.99	0.26	0.67	0.59	0.15	0.34	0.99	4.37	0.001	0.73
Motivation	15	4.27	1.03	0.26	4.96	0.81	0.21	0.69	0.98	0.25	0.15	1.23	2.72	0.05	0.75
Calmness	15	4.09	0.90	0.23	4.38	1.06	0.27	0.29	0.64	0.17	−0.07	0.64	1.75	ns	0.30
Fatigue	15	4.16	1.08	0.28	3.04	0.90	0.23	−1.11	1.22	0.31	−1.79	−0.44	−3.53	0.01	1.13
Anxiety	15	3.38	0.97	0.25	2.87	1.15	0.30	−0.51	0.93	0.24	−1.03	0.01	−2.12	ns	0.48
Depression	15	2.47	1.00	0.26	1.95	1.00	0.26	−0.52	0.77	0.20	−0.94	−0.09	−2.60	0.05	0.52
Anger management	15	2.48	0.74	0.19	1.80	0.59	0.15	−0.68	0.71	0.18	−1.08	−0.29	−3.73	0.01	1.03
Resentfulness	15	2.95	0.88	0.23	2.21	0.46	0.12	−0.74	0.68	0.18	−1.12	−0.36	−4.20	0.001	1.10
Stress symptoms	15	3.15	1.08	0.28	2.33	0.62	0.16	−0.82	0.91	0.23	−1.33	−0.32	−3.51	0.01	0.97
Work attitude	15	6.20	0.47	0.12	6.38	0.52	0.13	0.18	0.43	0.11	−0.06	0.42	1.59	ns	0.36
Strategic understanding	15	6.22	0.50	0.13	6.02	0.43	0.11	−0.20	0.53	0.14	−0.49	0.09	−1.46	ns	0.43
Manager support	15	4.98	1.81	0.47	5.97	0.83	0.22	0.98	1.64	0.42	0.08	1.89	2.33	0.05	0.74
Goal clarity	15	5.24	0.90	0.23	5.78	0.47	0.12	0.53	1.10	0.28	−0.07	1.14	1.88	ns	0.78
Job challenge	15	5.53	0.79	0.21	5.89	0.93	0.24	0.36	0.67	0.17	−0.02	0.73	2.05	ns	0.41
Value of contribution	15	5.69	0.73	0.19	6.11	0.37	0.10	0.42	0.62	0.16	0.08	0.77	2.62	0.05	0.77
Freedom of expression	15	4.47	1.19	0.31	5.11	0.71	0.18	0.64	1.35	0.35	−0.10	1.39	1.85	ns	0.68
Work intensity	15	5.40	0.63	0.16	5.58	0.60	0.16	0.18	0.78	0.20	−0.25	0.62	0.91	ns	0.30
Productivity	15	5.36	0.71	0.18	5.64	0.68	0.18	0.29	0.89	0.23	−0.20	0.78	1.26	ns	0.42
Communication effectiveness	15	4.57	1.10	0.28	5.27	0.92	0.24	0.70	1.40	0.36	−0.07	1.47	1.94	ns	0.69
Confidence in the organization	15	5.42	0.66	0.17	5.30	0.60	0.16	−0.12	0.90	0.23	−0.62	0.37	−0.53	ns	0.19
Morale issues	15	4.30	1.39	0.36	4.30	1.50	0.39	0.00	1.79	0.46	−0.99	0.99	0.00	ns	0.00
Time pressure	15	4.96	1.28	0.33	4.67	1.33	0.34	−0.29	1.32	0.34	−1.02	0.44	−0.85	ns	0.22
Intention to quit	15	1.90	1.30	0.34	1.37	1.04	0.27	−0.53	1.73	0.45	−1.49	0.42	−1.20	ns	0.46
Stress	14	9.21	2.26	0.60	7.57	3.18	0.85	−1.64	3.43	0.92	−3.63	0.34	−1.79	ns	0.60

SD, standard deviation; SEM, standard error of the mean; CI, confidence interval.

particularly the dimensions of fatigue, anxiety, depression and general stress symptoms. These symptoms may be more problematic and 'top of mind' than how stress may impact work performance. Another interesting note is that the timeframe for the data collection was September 2008 to spring of 2009, the same time historically that the US and global economy was in a major downturn. Life at work and outside work was even more likely to be stressful during this period. In this climate, observing a 'holding steady' pattern in the stress symptom data would have been considered an accomplishment, but as the data indicate, there was substantial improvement in stress indicators, even with the context of economic strain and resource constriction. Perhaps the most interesting individual indicator was the 'time pressure' metric in the oncology group that decreased significantly despite clinical resource constraints in the typically busiest part of the year for the hospital census.

Participants were not mandated to take the educational programme; they volunteered for participation. This could influence the results in a couple possible ways. The volunteer participants may have been more motivated to engage with the educational materials and experiences. On the other hand, they may have been experiencing more stress in their lives and decided to participate to address it. Either way, the decision was made from the beginning to provide the course as optional, not mandatory, for reasons stemming from health behaviour change theories that indicate that in order to engage in behavioural change, a person has to be at the stage of readiness that supports the change (Cassidy, 1997).

Implications

The findings from this project demonstrate that stress and its symptoms are challenging issues for hospital and ambulatory clinic staff. Further, a workplace intervention was feasible and effective in promoting positive strategies for coping and enhancing well-being, personally and organizationally. The following sections describe several specific implications and 'lessons learned' for the facilitators of the intervention, the staff and the organization.

Leadership

Nursing leadership identified the importance of empowering staff to use positive coping strategies to

promote a healthy work environment, address teamwork and to improve communication, decision making and patient safety. The team felt strongly that support for the intervention should be embraced and role modelled from the top. For this reason, selected nurse leaders were formally educated as facilitators, participated in personal coaching, received formal training evaluations and committed to teaching at least one course a month to assure integrity of the intervention. The facilitators committed to meet regularly as a team to build interpersonal cohesiveness and to strategize about operational issues. The facilitator group has expanded to include a leader from Human Resources as well.

The facilitators learned that it was important to build a personal practice of the tools and techniques. It was vital to give one's self permission to use the tools at work and at home, including the biofeedback device, software programmes and CD. This was important at two levels—it kept our resiliency high, and it gave us personal insights about practical issues that might be barriers and facilitators of using the practices. In this way, we could be more authentic and knowledgeable when answering questions about the intervention. Setting a daily intention is also helpful. It is easy to 'forget' and slip back into negative patterns of reaction and thought that have become 'normal'.

Staff participants/unit culture

One of the facilitators was the nurse manager of the oncology unit in this project. As part of her sustainability plan, she facilitated brainstorming by staff to design specific ways of encouraging practice of the skills. Ideas to promote and sustain a unit culture of posting coping and resilience included the following:

- creating a bulletin board to share stories and positive quotes
- encouraging early recognition of peers stress and intervene early
  - place magnetic 'breathe' cards in word unit as a practice reminder
- giving permission to colleagues to use the tools (e.g. software)
  - team leaders to encourage staff to take break and practise the skills
- creating code words to serve as signals for all staff. Communication—'code word', provided a 'pass'—green light, green moment
  - key words for oncology staff include 'breathe', 'green' (refers to the technology), 'pass' (permission or encouragement to take a break)
- sending 'care and compassion' to individuals who are unreceptive or discourage practice
- using quick coping tool before calling physicians
- printing out and post positive thought for the day
- placing stickers with the positive quote on staff members' assignment sheets every shift
- placing sign on back of the staff lounge or door from staff lounge to encourage them to think of one positive thing you did today as they are leaving
- playing music to play on the pods in the afternoon from 2:30–4:00

From a clinician's perspective

Staff experienced the clinical applications of the positive coping skills workshop in many ways. The following are direct quotes.

- Enhanced facilitation of critical thinking and decision-making skills (sometimes it used to take longer to process and prioritize in crisis—I have found my capability is tapped into more fully)
- Composure under stress is markedly increased—my threshold is much higher
- Increased confidence in my skills—I experience less overwhelm and anxiety about handling the 'what ifs'
- My work shifts are drama free (for the most part) when I do a sustained practice before I come to work and set an intention for the healing and safety of our patients, staff, families, the hospital in general
- My ability to listen more fully and non-reactively has increased—when I listen with a coherent heart rather than ego-based personality, I can appreciate the speaker, hear complaints or comments and get the energetic essence more quickly (the conversations go more smoothly)
- The tools help me on the spot in crisis or in unexpected situations where I need to stay unrattled
- I am empowered; I know I can manage my emotions rather than being reactive to common triggers
- I am even more able to see and share staffing issues through a wide angle lens and appreciate/explain the full impact (house-wide) to a unit team leader who is focused on their own work area
- In speaking with staff during rounds, most are open to, and appreciative of, the gift of the positive coping skills workshop and practices. It has shown them that leadership cares about them. In turn, they are better equipped to care for those around them
- Fewer physical effects: decreased frequency of migraines, decreased low back pain, decreased shoulder tension

One RN noted, 'I wish I had learned this in nursing school; it would have helped me avoid burnout.'

Organizational lessons learned

The key lesson learned was that internal marketing could not stop after the initial wave of recruitment. Although word of mouth is the most powerful recruitment strategy, new internal marketing efforts

are important to the ongoing sustainability and freshness of the programme. Likewise, it also became evident from participant requests that a refresher course was needed, so we designed a monthly 2-h course with online registration using the same process as the initial workshop sessions. The organization also provides incentives in the form of points that count toward a reduction in the healthcare plan premiums.

Based on the findings that outcomes were better when participants took the workshops with people they worked closely with, we make it possible/probable that work units register to take the class together. This builds community and sustainability by keeping reminders visible, positive and part of the work unit culture.

Participation in the initial programme was voluntary and remains so today. We discourage managers from prescribing these classes for staff who have performance concerns. Although some participants are sceptical when they attend the class, we believe it is essential that they are not coerced to attend.

The systematic approach to data collection and dissemination helped the institution see the value of the intervention. We took the data to top clinic and hospital leadership, and the positive results, especially that the results were sustained over a 7-month timeframe marked by a global economic downturn, were very helpful in garnering continued and expanded institutional support for the programme.

Limitations

The limitations of this study included that the sample size was relatively small. Since conducting this pilot work, we continue to collect data from larger and broader employee samples. Sample selection bias and sources of nonrandom error were also potential limitations; we did not make the workshops mandatory, and we also did not randomly assign participants to a control and treatment group. In the future, we would also like to collect physiological data to explore correlations with the self-report outcomes discussed here.

Conclusions

In summary, the positive coping strategies taught in this workplace intervention were feasible and effective in producing statistically significant outcomes from baseline to 7-month post-intervention. This magnitude of sustained change for a behavioural intervention is encouraging. The major lesson learned was that the intervention was more effective when taught to groups who normally work in close proximity, perhaps because of targeted sustainability strategies. Continued dedication of energy toward internal marketing, refresher courses, facilitator cohesiveness and integrity of the intervention are also key drivers for success. Also, the collection and dissemination of data was essential in helping garner continued support for the programme. If online approaches to this intervention become available, we would consider offering the course in an electronic format, although the person-to-person interaction strengthens much of the learning opportunities.

In healthcare environments, employees bear witness to the suffering of patients. Yet, employees are not immune from distress themselves; in fact, they are at risk for it. The current economic situation has also had impacts of fear and uncertainty for most people. In order to create and sustain a more healing and caring environment for patients, employees can learn and practise techniques that help them draw from their personal strengths and resources. These techniques can minimize the negative effects of stress and make employees more resilient, creative and effective in their many roles, personally and professionally. Making an internal 'shift' can prevent stress from creating a downward spiral in health, relationships and performance.

Many of the techniques taught in the intervention described here help participants change thoughts and emotions to be more positive and compassionate. The practices often place the individual in a state of centred awareness, better able to recognize and transform stress from a more balanced perspective. By attending to our own inner state, we can be more effective and caring in the multiple roles we play (Watson, 2009). As Rupp (2008, p. 154) describes the link between self awareness and service to the external world, 'The further we enter our authentic self, the greater the contribution of our presence in the world…We become a nonjudgmental, listening, caring presence…We look at a deeper level for what unites, instead of what divides.'

Caring presence is one of the major aspects of Jean Watson's Theory of Human Caring. The caring, healing relationship is extended through the use of presence and puts the one being cared for in a more optimal state for well-being. Caring presence can be extended to patients, colleagues, the world at large or (sometimes the most challenging of all) to self.

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