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Margaret C. McKee^a, Cathy Driscoll^a, E. Kevin Kelloway^a & Elizabeth Kelley^b

^a Department of Management, Saint Mary's University, Halifax, Nova Scotia, Canada

^b Dalhousie University, Halifax, Nova Scotia, Canada

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Exploring linkages among transformational leadership, workplace spirituality and well-being in health care workers

Margaret C. McKee*^a, Cathy Driscoll^a, E. Kevin Kelloway^a and Elizabeth Kelley^b

^a*Department of Management, Saint Mary's University, Halifax, Nova Scotia, Canada;*

^b*Dalhousie University, Halifax, Nova Scotia, Canada*

Considerable data have accumulated showing positive relationships between leadership and well-being, and spirituality and well-being, but few have explored relationships among all three phenomena. In the current study, multilevel modeling was used to analyze survey data from a sample of 178 health care workers and test a proposed mediation model. As hypothesized, regression and mediation analyses revealed the effects of transformational leadership on measures of employees' mental and spiritual well-being were fully mediated by workplace spirituality and, more specifically, respondents' sense of community. Our results suggest that leaders influence individual well-being through their ability to enhance employees' sense of community in the workplace.

Keywords: leadership; well-being; spirituality; HLM; mediation

To date, empirical studies exploring linkages between leadership and workplace spirituality have focused primarily on organizational and financial performance outcomes (e.g. Milliman *et al.* 2003; Fry 2005; McKee 2005; Fry and Matherly 2006; Fry and Slocum 2008; Rego and Pina e Cunha 2008). One outcome that has attracted comparatively little attention is that of employee well-being. However, recent reviews have documented an effect of leaders' behavior on a wide variety of measures related to individual health and well-being (Kelloway and Barling 2010). Consistent with the need for multiple indices of well-being (Kelloway and Day 2005), leaders' behavior has been associated with psychological, physical and behavioral outcomes related to health (Mullen and Kelloway 2010). Moreover, research has shown that supervisor behaviour has a greater effect on employee mental well-being than many other factors, including stress, life and work events (Gilbreath and Benson 2004), and transformational leadership in particular has been positively associated with many positive individual and organizational outcomes, including employee psychological well-being (Arnold *et al.* 2007). Likewise, consider-

*Corresponding author. Email: Margaret.McKee@smu.ca

able data have now accumulated suggesting a link between aspects of spirituality and individual well-being (George *et al.* 2000). Beliefs centering on, for example, compassion and caring have been found to foster optimistic world-views and well-being (Koenig and Larson 2001). More recently, studies have shown positive linkages between spirituality and lower levels of psychological distress in cancer patients (Laubmeier *et al.* 2004), higher quality of health life and psychological well-being in female HIV-positive women (Dalmida 2006), and improved sleep quality and health status in male and female HIV-infected individuals (Phillips *et al.* 2006). Aspects of spirituality have been implicated in cardiovascular outcomes (Koenig *et al.* 1998), recovery from major surgery (Ai *et al.* 1998), coping with cancer (Acklin *et al.* 1983) and dealing with chronic pain (Rippenrop *et al.* 2005). Although many research questions regarding these associations remain unanswered (George *et al.* 2000; Rippenrop *et al.* 2005), spirituality in general appears to have a salutary effect on individual well-being.

In the current article, we extend these literatures to examine the potential relationships among transformational leadership, workplace spirituality and individual well-being. Authentic transformational leadership, grounded in moral foundations, comprises four components – idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration – which are enacted as behaviours that express the leader's ethical values, concern for self and others, and a moral process of social ethical choices and actions (Bass and Steidlmeier 1999). It is particularly relevant for use with this study for two reasons. First, from their detailed review of 127 international studies focusing on nursing leadership, Cummings *et al.* (2010) found that transformational leadership was the most commonly used leadership theory. Second, the specific components and included behaviors of transformational leadership address the issues and opportunities inherent in healthcare settings. For example, the inspirational motivation component, which entails, on a macro level, gaining commitment to a vision, is particularly powerful in healthcare settings, where the work is difficult but the impact is high (Cummings *et al.* 2008). In these situations, transformational leaders can influence workers' sense of the meaningfulness, commitment and identification with their work. Accordingly, we propose and empirically examine a model suggesting that workers' perceptions of a supervisor's transformational leadership predict workplace spirituality, which in turn predicts well-being. Our model is depicted in Figure 1 with rationales for specific predictions following.

We suggest that this research is an important extension for several reasons. First, as already indicated, little empirical research has been published exploring linkages between these three phenomena. Additionally, much of the related literature has focused on religious coping (Harrison *et al.* 2001) and religious practices (Ai *et al.* 1998) that cannot be expressed in the context of a secular workplace; the broader concept of spirituality, potentially relevant in the workplace, has not been substantially addressed. Second, in contrast to contemporary models that largely ignore situational influences on spirituality (e.g. Gall

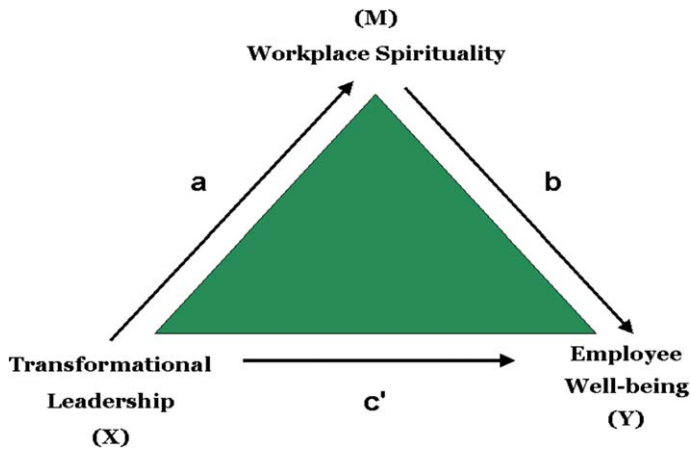


Figure 1. Proposed model of the effects of transformational leadership on employee well-being mediated through workplace spirituality.

et al. 2005), we draw on recent organizational research that suggests aspects of workplace spirituality may be influenced by aspects of the workplace, such as leadership (e.g. Arnold *et al.* 2007). We will now discuss the relevant literatures in more detail, beginning with transformational leadership.

Transformational leadership

Transformational leadership is one of the most studied theories of leadership (Bono and Judge 2004). Transformational leaders are said to be employee-focused and make concerted efforts to inspire and motivate employees to attain shared goals, to stimulate their intellectual development and provide opportunities for meaningful work, to demonstrate interest in their employees' personal and professional development, and to model and promote behavior consistent with the values of the organization (Bass 1985). Transformational leadership that is authentic, that is "grounded in values, based in trust and rooted in spirituality", is theorized to increase the moral behavior of leaders and of the overall organization (Bass and Steidlmeier 1999, p. 193). A person exhibiting such leadership has been described as an "ideal moral type" and one who may possess a spiritual dimension that "underscores not only virtuous behavior, but an attitude of openness to the transcendent meaning of human existence" (Bass and Steidlmeier 1999, p. 193).

In research studies, transformational leadership has been associated with important organizational outcomes such as positive work attitudes (De Hoogh *et al.* 2005), organizational commitment (Koh *et al.* 1995; Dvir *et al.* 2004; Piccolo and Colquitt 2006), empowerment (Kark *et al.* 2003) and organizational citizenship (Koh *et al.* 1995; Podsakoff *et al.* 1996). Researchers have found significant relationships between transformational leadership and leader satisfaction (Hater and Bass 1988; Deluga 1991, 1995; Koh *et al.* 1995; Shieh

1997), and trust in the leader (Podsakoff *et al.* 1996; Arnold *et al.* 2001; Gillespie and Mann 2004). We will now discuss employee well-being, one of the other phenomena of interest in our study.

Employee well-being

Scholars studying well-being distinguish among hedonic, eudaimonic and social well-being subjective (Gallagher *et al.* 2009). In this article we focus on hedonic well-being, which is defined broadly as experiencing “pleasant emotions, low levels of negative moods, and high life satisfaction” (Diener, Lucas and Oishi, 2002, p. 63). It is also characterized as “an active state consisting of positive affect and high arousal” (Turner *et al.* 2002, p. 715). Work may be related to well-being because it provides a source of “positive social relationships”, “a sense of identity and meaning” and an “optimal level of pleasurable stimulation” (Diener *et al.* 1999, p. 293). Organizational scholars focusing on employee well-being have identified a host of possible factors influencing job-related well-being, ranging from work patterns, job design, the role of teams and work groups (Turner *et al.* 2002) to job insecurity, long work hours, supervisor behavior, and loss of control at work (Sparks *et al.* 2001).

To date, empirical studies have demonstrated that employee well-being is positively associated with high control over work and work procedures, a supportive team leader, and a low level of monitoring (Holman 2002); and negatively associated with employees working under time pressures and in large work units (Pekkarinen *et al.* 2004).

In a comprehensive review of the transformational leadership and mental health literature, Kelloway *et al.* (2005) detailed how poor quality leadership (i.e. passive and abusive leadership) contributed to negative outcomes, such as increased employee stress levels (Offermann and Hellmann 1996), anxiety and depression (Hoel *et al.* 1999), high frustration, sense of helplessness and alienation (Ashforth 1994), and was associated with lower job and life satisfaction, decreased organizational commitment and increased work–family conflict (Tepper 2000). Conversely, research has also shown that employees who perceive their supervisor as supportive, experienced reduced work stress, compared to support from other sources, even co-workers (Lim *et al.* 2008).

Research also suggests leaders can directly affect some health-related behaviors of their employees. For example, high social support from a variety of sources, including supervisors and coworkers, has been associated with a lower prevalence of smoking in municipal government workers (Väänänen *et al.* 2008). There is also evidence of relationships between leaders/supervisors and employee physiological well-being. For example, lack of supervisor support has been associated with sickness absences among women (Väänänen *et al.* 2003; Ishizaki *et al.* 2006), and high level of social support has been associated with fewer illness symptoms (Olbier *et al.* 2007).

There is considerable interest in employee well-being in the health care setting, where health and well-being are seen as critical for a workplace that has been characterized as “exhausted and stretched” (Cummings *et al.* 2010, p. 364). Previous studies have focused primarily on organizational outcomes such as job satisfaction (e.g. Casida and Pinto-Zipp 2008) and organizational commitment among nurses (e.g. Laschinger and Leiter 2006). The extensive review of nursing leadership research by Cummings *et al.* (2010) identified 11 studies considering nurses’ health and well-being. Of relevance to our research are the findings that transformational leadership was associated with better health and lower levels of emotional exhaustion and job stress (Stordeur *et al.* 2001). Accordingly, based on the previously described literature, we hypothesized the following:

Hypothesis 1: Transformational leadership will be positively associated with employees’ well-being.

Workplace spirituality

Our last phenomenon of interest is workplace spirituality, which we suggest is both a plausible outcome of transformational leadership and a potential mediator of the effect of transformational leadership on employee well-being. As is common with an emergent field, there are different views on what is meant by the term “workplace spirituality”. Following Ashmos and Duchon (2000), Duchon and Plowman (2005) and Rego and Pina e Cunha (2008), we conceptualize workplace spirituality as consisting of three elements: meaningful work, sense of community, and value alignment.

Meaningful work is not a new concept. Hackman and Oldham (1980, pp. 78–79) identified three core job characteristics that are necessary for people to experience meaningfulness as being “skill variety, task identity and task significance.” The latter characteristic is defined as “the degree to which the job has a substantial impact on the lives of other people, whether those people are in the immediate organization or in the world at large” (Hackman and Oldham 1980, p. 79). However, as argued effectively by Duchon and Plowman (2005, p. 814), the concept of meaningful work in the management, spirituality and religion (MSR) domain goes beyond this notion and encapsulates the idea of “life-giving” work in that it is of great personal value to the individual and meets their inner needs for deeper meaning and purpose. Milliman *et al.* (2003, p. 429) agree and state that “the spirituality view is that work is not just meant to be interesting or challenging”, but it is also about “expressing one’s inner life needs by seeking meaningful work.”

The second dimension of the workplace spirituality construct is sense of community, first proposed by Ashmos and Duchon (2000). They argued that, for many employees, work represents a form of community and that people seek this sense of connectedness at work. Sense of community also incorporates the idea that these connections occur at a deeper inner level (Maynard, 1992 and Miller, 1992 as cited in Milliman *et al.* 2003, p. 429).

Lastly, values congruence models in psychology and organizational behavior have looked at the fit between personal and organizational values (Chatman 1989; Liedtka 1989). Ashforth and Pratt (2003) suggest that studies of person–organization fit demonstrate that when there is greater alignment between the worker and an organization in terms of values, beliefs and practices, there are likely to be positive outcomes for both. In the workplace spirituality literature, value alignment includes the idea that “an individual’s purpose is larger than oneself and should make a contribution to others or society” (Milliman *et al.* 2003, p. 430).

Our second set of hypotheses relate to workplace spirituality and its role as an intervening variable between transformation leadership and employee well-being, as in path a-b of Figure 1. As discussed in the introduction, there is empirical support for workplace spirituality mediating the effects of leadership on employee outcomes (Sparks and Schenk 2001; Fry *et al.* 2005; McKee 2005; Fry and Matherly 2006; Fry and Slocum 2008), but there is as yet limited evidence of linkages with employee well-being outcomes (Arnold *et al.* 2007). Based on these findings and theories about possible interrelationships among these phenomena (Fry 2003), we developed the following set of hypotheses to test the indirect effect of transformational leadership, mediated through workplace spirituality, on employees’ well-being:

Hypothesis 2: The effect of transformational leadership on employees’ well-being will be mediated by workplace spirituality.

Method

Participants

The participants for this study were employees of a not-for-profit Canadian health care organization. Unlike many such organizations, it did not have any current or historical religious affiliation. The data in this study came from 178 employees who completed a survey prior to the start of a leadership training initiative. These respondents were full-time workers who were overwhelmingly female (89%), tended to be older (28% were between 36 and 45 years of age, and 37% were between 46 and 55), and 64% had more than 5 years of tenure with the organization (41% had 5–10 years of service, and 24% had 11–15 years). The majority of participants (75%) reported to a supervisor, with the next largest group (13%) reporting to a manager. The remaining 12% reported to an individual with the title of director or above. In terms of business unit affiliation, the largest number of respondents (54%) were from homecare; 30% and 14% of respondents were from long-term care and corporate support services, respectively.

Procedure

All employees were invited to complete an anonymous and confidential survey to assess their immediate supervisor’s leadership behavior, as well as answer

questions relating to their work experience and personal well-being. Email reminders and information posters in high-traffic areas were used to promote participation in the study. No incentives for participation were offered and all study procedures were reviewed and approved by the Research Ethics Board of the university.

Measures

Outcomes

Scholars interested in the development of healthy workplaces have stressed the need for multiple indices of employee well-being (Kelloway and Day 2005). In their review of 53 studies of nurses and their environments, Cummings *et al.* (2010) found that health and well-being were assessed with a variety of measures including health complaints, job stress, personal stress, emotional health and anxiety. Accordingly, we decided to assess employees' mental well-being, their healthy behavior, their physiological well-being and their spiritual well-being. The multiple measures of well-being were deemed particularly important given that the research site was a health care organization and that employees in such organizations – particularly nurses – have been characterized as among the most “overworked, stressed and sick workers” (Cummings *et al.* 2008).

To assess mental well-being, we used the 12-item General Health Questionnaire (GHQ-12; $\alpha = .89$; Goldberg and Williams 1988). Sample items include: “Have you been able to concentrate on what you are doing?” and “Have you been feeling happy all things considered?” We used the Likert method of scoring (Stride *et al.* 2007) in which participants responded using a 7-point Likert scale, (1 = “not at all”, 7 = “frequently or always”), with higher scores indicating higher levels of mental health.

To assess healthy behavior, we used a 6-item index ($\alpha = .63$) created by Francis (personal communication, 23 August 2005) that focused on behavior related to sleeping, eating, exercise, etc. Respondents were asked to indicate their level of agreement using a 7-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”). Higher scores indicated healthier behaviors.

Physiological well-being was assessed with 10 items ($\alpha = .77$) adapted from work by Johnston *et al.* (1995) and Derogatis and Cleary (1977). These items asked respondents to report how often they experienced a variety of symptoms in the previous six months, including nausea or upset stomach, pain in lower back, headaches, etc. Respondents were asked to answer using a scale from 1 to 5, with (1 = “never”, 5 = “very often”) lower scores representing higher physical well-being.

To assess spiritual well-being, we used a 20-item scale ($\alpha = .93$) developed by Paloutzian and Ellison (1982). The scale is one of five measures King and Crowther (2004) recommend because of its use in more than 400 studies (Hill and Pargament 2003). Sample items included: “I feel that life is a positive experience”; “I have a personally meaningful relationship with God *or a Higher Power.*” Again, respondents were asked to use 7-point Likert scales to

indicate their level of agreement or disagreement with the items (1 = “strongly disagree”, 7 = “strongly agree”), with higher scores representing higher levels of spiritual well-being.

Predictors

We used 20 items ($\alpha = .96$) from the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1995) to create a measure of transformational leadership. Respondents were asked to indicate their level of agreement or disagreement with the items using a 5-point Likert scale, (with 0 = “Not at all” and 4 = “Frequently, if not always”), with higher scores representing higher levels of perceived transformational leadership behavior. It is common to find that the dimensions comprising transformational leadership (i.e. intellectual stimulation, idealized influence, inspirational motivation and individualized consideration) are highly intercorrelated (for example, Barling *et al.* 1996). Our data were no exception with the average correlation among subscales being .92. Accordingly, we followed common practice by computing one overall measure of transformational leadership.

Mediator

To measure employee perceptions of workplace spirituality, we created an index comprised of three previously validated scales to measure meaningful work, sense of community and shared values. For meaningful work, we used a six-item measure ($\alpha = .92$) developed by May *et al.* (2004). Sample items included “The work I do on this job is worthwhile” and “The work I do on this job is meaningful to me.” To assess the alignment of individuals’ values with those of the organization, we used a three-item scale ($\alpha = .84$) by Cable and Judge (1996). Sample items included: “To what degree do you feel your values ‘match’ or fit with this organization and the current employees in this organization?” and “Do you think the values and ‘personality’ of this organization reflect your own values and personality?” To measure sense of community, we used seven items ($\alpha = .91$) developed by Milliman *et al.* (2003) to evaluate “conditions of community.” These items were based on items in a scale created by Ashmos and Duchon (2000). Sample items include “I think employees are linked with a common purpose” and “I feel part of a community here.” Respondents were asked to indicate their level of agreement or disagreement with the scale items on a 7-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”). To assess the distinctiveness of the three measures, we conducted a series of confirmatory factor analyses contrasting a three-factor and a one-factor model. The three-factor model provided a good fit to the data, χ^2 (101, $N = 178$) = 218.09, $p < .01$; IFI = .94; CFI = .94; RMSEA = .08) and a significantly better fit than did the one-factor model, χ^2 (104, $N = 178$) = 989.23, $p < .01$; IFI = .52; CFI = .51; RMSEA = .22; $\chi^2_{\text{difference}}$ (3, $N = 178$) = 771.20, $p < .001$) supporting the use of these measures as three separate scales.

Control variables

In order to reduce possible confounding effects, we utilized a number of control variables: age, tenure in years, and business unit.

Analysis procedure

Given the nested nature of our study data, with individual employees associated with particular leaders and leaders associated with specific business units, our analytical approach needed to account for the lack of independence of observations to prevent concerns over misspecification of error variances. Multilevel analysis, or mixed modeling or hierarchical linear modeling as it is also called, has been suggested as one effective approach for accounting for the absence of residual independence (Hofmann *et al.* 2000). Multilevel techniques are attracting increased attention from organizational scholars and becoming more frequently used by researchers studying the relationships between leaders and their employees (see e.g. Bliese *et al.* 2002; Mathieu *et al.* 2007; Gentry and Martineau 2010).

Results

Means, standard deviations, and intercorrelations for all study variables are presented in Table 1.

Multilevel regression analyses

To test hypotheses 1a to 1d, we followed the conventions for multilevel analyses using SPSS 14.0 (Birdi *et al.* 2008) and first constructed a baseline model for each of the four dependent variables against which to assess the contribution of the predictors. Next, we estimated an unconditional model for each outcome, which also contained no predictors but allowed the intercept term to vary by leader, i.e. the first level 2 variable and by business unit (the level 3 variable). After this we entered the control (i.e. age and tenure) and predictor variable (i.e. transformational leadership). Finally, we estimated a model incorporating the control, predictor and hypothesized mediating variables. As recommended by Hofmann and Gavin (1998), predictors were grand mean centered before entering them into the model. Following Birdi *et al.* (2008), we used the change in the -2 times the log likelihood statistic (reported as $-2LL$) to assess the model fit at the various stages of analysis.

Results of these analyses are presented in Table 2. After controlling for the group effect and demographic predictors, transformational leadership emerged as a significant predictor of GHQ ($B = .18, p < .05$) and spiritual well-being ($B = .15, p < .05$), but was not significantly associated with either physiological well-being or healthy behaviors. Thus, our data supported an initial effect of leadership on mental and spiritual well-being. Following the Baron and Kenny (1996) approach to mediation, we followed up on these initial analyses by

Table 1. Means, standard deviations, intercorrelations and scale reliabilities.

	M	SD	1	2	3	4	5	6	7	8	9
Age*	4.00	—									
Tenure*	2.00	—	.27								
GHQ	5.59	.97	.23	.11							
Healthy behavior	4.95	1.11	-.02	-.15	.29						
Physical health	1.91	.55	-.07	-.15	-.54	-.16					
Spiritual well-being	5.52	1.03	.20	.13	.60	.23	-.29				
Sense of community	4.97	1.30	-.01	.04	.34	.21	-.17	.37			
Meaningful work	4.50	.53	.16	.00	.28	.17	-.05	.36	.16		
Value alignment	3.35	.74	.03	-.13	.28	.10	-.06	.27	.63	.21	
Transformational leadership	2.44	.90	.03	.03	.18	.00	.05	.15	.26	.07	.24

Note: Listwise N for correlations = 168.

*Median reported. For age, 4 represents category 46–55 years; for tenure, 2 represents 5–10 years. $r = .15, p < .05$ (2-tailed); $r = .25, p < .01$ (2-tailed).

Table 2. Effects of transformational leadership on employees' well-being.

Model	GHQ	Healthy Behaviors	Physical Well-being	Spiritual Well-being
Model Fit (-2LL)				
Null	504.64	504.64	507.48	501.80
Unconstrained	504.62	504.51	503.79	500.82
Step 1	492.52	500.97	502.05	488.96
Step 2	469.75	487.94	490.47	457.72
Model Coefficients Step 1				
Age	.20**	.04	-.02	.16*
Tenure	.04	-.13	-.11	.08
Transformational Leadership	.18*	.03	.03	.15*
Step 2				
Age	.20**	.05	-.04	.18*
Tenure	.05	-.16*	-.10	.08
Transformational Leadership	.08	-.02	.10	.08
Sense of Community	.24*	.33**	-.23*	.22*
Value Alignment	.13	-.17	.02	.02

Notes: * $p < .1$ (1-tailed) ** $p < .05$ (2-tailed) *** $p < .01$ (2-tailed) **** $p < .001$ (2-tailed).

assessing whether leadership was associated with each of the three dimensions of spirituality. Again, based on a mixed model analysis controlling for age and tenure, leadership was associated with sense of community ($B = .27, p < .01$) and value alignment ($B = .24, p < .05$), but not with meaningful work ($B = .07, ns$). Accordingly, only sense of community and value alignment were used in subsequent analyses as mediators.

We estimated a final set of analyses assessing whether sense of community and value alignment mediated the effect of transformational leadership on both mental and spiritual well-being (see Table 2). In both cases, adding the mediators reduced the originally significant effect of leadership to non-significance, thereby supporting full mediation. In both cases, sense of community (GHQ: $B = .32, p < .01$), spiritual well-being ($B = .24, p < .05$), but not value alignment emerged as a significant predictor of the criterion.

Discussion

In this study we examined the relationships among transformational leadership, workplace spirituality and individual well-being. Consistent with our hypotheses, workplace spirituality fully mediated the effects of transformational leadership on respondents' mental and spiritual well-being, as we have defined them. The finding of an indirect effect on mental well-being is consistent with the finding of Arnold *et al.* (2007). The finding that the effect of transformational leadership on spiritual well-being is also mediated by workplace spirituality provides the first known empirical support for a much theorized relationship (Delbecq 1999; Fry 2003; Benefiel 2005). While Fry and colleagues

(see Fry *et al.* 2005; Fry and Matherly 2006; Fry and Slocum 2008) found evidence of workplace spirituality as a mediator of spiritual leadership on outcome measures related to employee performance and organizational commitment, they did not have employee GHQ as an outcome measure.

Our findings extend previous research by isolating employees' sense of community in the workplace as the dimension of workplace spirituality that plays a particularly important role in predicting employee well-being. Sense of community, but not value alignment or sense of meaning, was a significant mediator in two of the equations and a significant predictor of all four forms of well-being included in this study. However, these results contradict others that have found a sense of meaningful work to be a mediator between leadership and well-being (Arnold *et al.* 2007). We note that, unlike their study that measured only meaning, our research allowed us to isolate the effects of three dimensions of workplace spirituality.

These findings suggest that transformational leadership behaviours may positively influence their employees' mental and spiritual well-being through their ability to create a strong sense of community in the workplace. Certainly, there is an extensive body of literature documenting the beneficial effects of support from managers (for example, Halbesleben 2006). These data show that managerial support has been linked with lower levels of perceived stress, job strain, burnout and depression (e.g. Lee and Ashforth 1996; Moyle 1998; van Dierendonck *et al.* 2004; Rooney and Gottlieb 2007).

The data did not support the hypothesized associations between transformational leadership and healthy behavior, or transformational leadership and physiological well-being. As this is the required first condition to be met in mediation analyses (Baron and Kenny 1986), this meant that the hypotheses related to mediation were also not supported. That said, the analysis did reveal that workplace spirituality, and more specifically sense of community in the workplace, was a significant predictor of healthy behavior and physiological well-being. Thus, while these data do not meet the formal criteria for mediation, they do suggest that (a) leadership has an indirect effect on health outcomes and that (b) workplace spirituality has a direct effect on these outcomes. To the extent that individual respondents saw themselves as sharing values with the employing organization, perceived meaning in their work, and reported having a sense of community, they scored higher on each of the health outcomes assessed in the study.

These results offer support for the link between workplace spirituality and individual well-being and the motivation for further empirical enquiry. In particular, longitudinal analyses would allow the assessment of temporal ordering in the variables we assessed and would provide a stronger basis for causal inference.

Potential limitations

Like all research, this study has both strengths and weaknesses. In terms of strengths, the data were analyzed using multilevel modeling, an approach being

increasingly recommended for studies with hierarchically structured data. This more sophisticated approach allowed for the simultaneous examination of several variables and their respective contributions to the model. As a result, this analytical approach should provide greater confidence in the validity of the results. The sample was reasonably large and consisted of working adults in a relatively high stress work environment.

In terms of limitations, the study is a cross-sectional study and so, as referenced above, no inferences can be made about causality. Longitudinal research is required to see if the effects hold up over time. The study is also based on self-report data from a single source and, as such, is prone to all of the limitations and biases inherent in such an approach. However, this data collection method is the one most often used in leadership studies (Fiedler 1996; Bass *et al.* 1999). It has been argued that, because of their vantage point, employees are in the best position to evaluate leaders' range of behaviors, so it is appropriate they provide study data (Gilbreath and Benson 2004). Empirically, the large number of small, non-significant correlations observed in our data substantially limits the possibility that our findings are inflated through common method variance (Lindell and Whitney 2001).

The fact that the study explores deeply personal areas, namely well-being and workplace spirituality, also makes the use of surveys somewhat problematic. As pointed out by Milliman *et al.* (2003) and Diener *et al.* (1999), respectively, the nature of workplace spirituality and personal well-being may not lend themselves to effective study through a survey instrument. We attempted to partly address such concerns by using well-known and validated scales, such as the spiritual well-being scale. We operationalized workplace spirituality in a particular way, and some may take issue with our conceptualization. For example, as one of our reviewers insightfully pointed out, when we asked participants about the degree to which they found their work to be "life-giving", we cannot be sure if their responses reflected their views on their personal spirituality or the fact that their work is in the health care sector and as such is very much associated with promoting life. Given these measurement issues, more work remains to be done in this area.

It is also recognized that participants were drawn from a single health care organization and were likewise members of distinct business units. Through the collection of comprehensive demographic data and their use as control variables, efforts were made to control for the differences in employee work environments. These factors all potentially limit the generalizability of the findings. Similar studies need to be carried out with other types of workers and in other types of work environments to see if the same pattern of results holds true.

Conclusion

This study demonstrated support for a model in which the effects of transformational leadership on employee mental well-being and spiritual well-being were indirectly realized through the intervening variable of workplace spirituality.

To date, we are not aware of any published studies that have empirically demonstrated such a relationship with similar workplace spirituality and employee well-being measures, although several MSR studies have found evidence of workplace spirituality mediating the effects of leadership on other employee outcomes. Our findings contribute to the increasing body of research on workplace spirituality and the development of healthy workplaces by suggesting one path by which transformational leaders might positively influence the well-being of their employees. As research in the religion, spirituality and health areas has shown, people who are healthier mentally and spiritually will be more resilient to the negative effects of work related stress. Given the importance of the role of health care workers, the chronic shortages of such skilled employees and the difficult circumstances under which they are said to be working (Cummings *et al.* 2008), it would seem important to use every possible means to support these individuals in the important work they do in our society.

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Notes on contributors

Margaret C. McKee is an assistant professor in the Department of Management at Saint Mary's University. She received her PhD in Business Administration in 2008 and her research interests include organizational leadership, corporate social responsibility, values-based organizational cultures and employee well-being. Her work has been published in the *Journal of Business Ethics*, *Journal of Occupational Health Psychology* and *The Journal of Management, Spirituality, and Religion*.

Cathy Driscoll received her PhD. in organizational behavior and marketing from Queen's University in 1994. She is professor in the Department of Management in the Sobey School of Business at Saint Mary's University in Halifax, Nova Scotia. Her research interests include business ethics, ethical leadership, management education, stakeholder management, and spiritual and religious values in ethical decision making. She has published articles in *The Journal of Business Ethics*, *Business and Society*, and *The Journal of Management, Spirituality, and Religion*.

E. Kevin Kelloway is the Canada Research Chair in Occupational Health Psychology and Professor of Psychology and Management at Saint Mary's University where he also serves as Director of the CN Centre for Occupational Health and Safety. A Fellow of the Canadian Psychological Association, the Association of Psychological Science and the Society for Industrial/Organizational Psychology, his research interests include unionization, work stress, workplace violence, occupational safety and the effect of leaders' behaviors on employee health and safety.

Elizabeth Kelley is an Associate Professor, School of Business Administration, Dalhousie University, Halifax, Nova Scotia. She holds a PhD from Saint Mary's

University in Business Administration. Her area of research interest is transformational leadership and more specifically leading in a remote environment. She has presented her research at Canadian and international conferences, published several book chapters on leadership and has articles in *Human Relations* and the *International Journal of Workplace Health Management*.

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Appendix A

General Health Questionnaire, Goldberg, D.P. (1972)

1	2	3	4	5	6	7
Not at all	A little	Once in a while	Sometimes	Fairly often	Often	Frequently or always

During the last 6 months, ...

1. Have you been able to concentrate on whatever you're doing?
2. Have you lost much sleep from worry? (recoded)
3. Have you felt you were playing a useful part in things?
4. Have you felt capable about making decisions about things?
5. Have you felt under strain? (recoded)
6. Have you felt that you couldn't overcome your difficulties? (recoded)
7. Have you been able to enjoy normal day-to-day activities?
8. Have you been able to face up to your problems?
9. Have you been feeling unhappy and/or depressed? (recoded)
10. Have you been losing confidence in yourself? (recoded)
11. Have you been thinking of yourself as a worthless person? (recoded)
12. Have you been feeling happy, all things considered?

Items used to Assess Healthy Behaviour

Francis (2005)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral don't know	Somewhat agree	Agree	Strongly agree

During the past 6 months, ...

1. I exercise for at least 30 minutes 3 times a week.
2. I sleep 7–8 hours a night.

3. I eat a well-balanced diet.
4. I eat breakfast every day.
5. I often skip meals. (recoded)
6. I get regular medical check-ups.

Items used to Assess Physiological Health

Johnston *et al.* (1995); Derogatis and Cleary (1977)

1	2	3	4	5
Never	Seldom	Sometimes	Often	Very often

During the past 6 months, how often have you experienced . . .

1. Nausea or upset stomach? (recoded)
2. Pain in your lower back? (recoded)
3. Headaches? (recoded)
4. Pain in the heart or chest? (recoded)
5. Faintness or dizziness? (recoded)
6. Numbness or tingling in parts of your body? (recoded)
7. A lump in your throat? (recoded)
8. Trouble getting your breath when not exercising or working hard? (recoded)
9. Hot or cold spells? (recoded)
10. Heavy feelings in your arms and legs? (recoded)

Items used to Assess Spiritual Well-being

Paloutzian and Ellison (1982) ©

Existential Well-being

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral don't know	Somewhat agree	Agree	Strongly agree

Sample items:

1. I feel unsettled about my future. (recoded)
2. I feel very fulfilled and satisfied with life.
3. I believe there is some real purpose for my life.

Religious Well-being

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral don't know	Somewhat agree	Agree	Strongly agree

Sample items:

1. I have a personally meaningful relationship with God or a Higher Power
2. I don't get much personal strength and support from God or a Higher Power. (recoded)
3. I feel most fulfilled when I'm in close communion with God or a Higher Power.

Items used to Assess Transformational Leadership

Multifactor Leadership Questionnaire ©
Bass and Avolio (1995)

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly Often	Frequently if not always

Sample items:

The person I am rating. . . .

1. Talks about their most important values and beliefs.
2. Treats me as an individual rather than just as a member of a group.
3. Gets me to look at problems from many different angles.
4. Emphasizes the importance of having a collective sense of mission

Items used to Assess Workplace Spirituality

Meaningful Work (May et al. 2004)

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

1. The work I do on this job is very important to me.
2. My job activities are personally meaningful to me.
3. The work I do on this job is worthwhile.
4. My job activities are significant to me.
5. The work I do on this job is meaningful to me.
6. I feel that the work I do on my job is valuable.

Sense of Community (Milliman et al. 2003)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree Somewhat	Neutral don't know	Somewhat agree	Agree	Strongly agree

1. Working cooperatively with others is valued at Northwood.
2. I feel part of a community here at Northwood.
3. I believe people support each other here at Northwood.
4. I feel free to express my opinions.
5. I think employees are linked with a common purpose.
6. I believe employees genuinely care about each other at Northwood.
7. I feel there is a sense of being part of a family working at Northwood.

Values Alignment (Cable and Judge 1996)

1	2	3	4	5
Not at all	A little	Somewhat	Very much	Completely

1. To what degree do you feel your values “match” or fit with this organization and the current employees in this organization?
2. My values match those of the current employees in this organization.
3. Do you think the values and “personality” of this organization reflect your own values and personality?