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# The role of spiritual leadership in reducing healthcare worker burnout

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## ABSTRACT

Healthcare workers are especially at risk for burnout because of increased efficiency demands, reduced operations budgets, expedited turnaround times, and the consequences associated with patient errors. They also experience a number of negative personal and organizational outcomes from burnout, such as psychological distress, poor health, negative work attitudes, work conflict, absenteeism, turnover, job dissatisfaction, and medical errors, all of which have the potential to negatively affect the quality of healthcare. However, to date no empirical studies examined the influence of spiritual leadership on burnout in medical laboratories, whose workers are especially at risk for burnout. This study explores the extent to which spiritual leadership reduces burnout among medical laboratory personnel while positively influencing organizational commitment, work unit productivity, and employee life satisfaction. Results revealed spiritual leadership exhibited both direct and mediating effects on study outcomes. Implications for theory, research, and practice are discussed.

## ARTICLE HISTORY

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## KEYWORDS

Medical laboratory; spiritual leadership; burnout; healthcare; leadership

Interest in the study of burnout continues to increase since its initial investigation in the 1970s. Freudenberger (1974) first described burnout as the deterioration process experienced by professionals in human service organizations. Burnout occurs when individuals feel they have insufficient resources such as limited time, energy, and support to address the daily demands of the workplace (Thomas and Lankau 2009). Other research defines burnout as a psychological disorder that occurs in individuals who work with other people and experience physical, mental and emotional exhaustion, depersonalization, and reduced personal accomplishment (Kanste 2008; Khamisa, Peltzer, and Oldenburg 2013; Maslach, Jackson, and Leiter 1996; Maslach, Leiter, and Jackson 2012; Thomas and Lankau 2009). Thus, recognizing the factors that evoke burnout is important for deepening our understanding of its predictors and consequences, especially for the workplace.

Predictors of burnout include role conflict, role stress, lack of role clarity, excessive workload, increased work pressure, and minimal supervisory support (Bobbio, Bellan, and Manganelli 2012). Certain personality traits might also incline or predispose certain people to highly stressful jobs and therefore are, by their nature, burnout prone (Armon, Shirom, and Melamed 2012). Other predictors of burnout as reported by

healthcare workers, which is the focus of this study, include gender, age, marital status, years of experience, type of psychological pathology, treatment method, and job-related factors consisting of staff-to-patient ratios (Ballenger-Browning et al. 2011).

Although studies in this area are limited, there is some evidence that leadership may play an important role in mitigating the negative effects of burnout in healthcare. The purpose of this study is to explore to what extent spiritual leadership positively influences organizational commitment, productivity, life satisfaction, and reduces burnout in a particularly stressful healthcare work environment – the medical laboratory. First, we review the extant research on burnout in healthcare in general and the medical laboratory in particular. Second, we detail the limited research on the impact of leadership on burnout in healthcare environments, noting that no spiritual leadership studies on burnout have been conducted on medical laboratories. Then we review spiritual leadership theory and offer hypotheses for testing the extent to which the spiritual leadership model reduces burnout while positively influencing organizational commitment, productivity, and life satisfaction. Next, we test our hypotheses using a sample of 235 medical laboratory workers. Finally, we offer suggestions for future leadership theory, research, and practice in healthcare settings.

This research contributes to our understanding of spiritual leadership in healthcare organizations in several ways. First, as a seminal spiritual leadership study conducted in medical laboratories, we extend the domain of spiritual leadership research into this critical milieu so essential to the patient care process. Second, the results of this study establish heightened interest for further investigation of the role spiritual leadership can play in reducing burnout. Third, our finding that membership overwhelmed the influence of calling on burnout. This provides evidence that a caring supportive culture fosters a sense of belonging, understanding, and appreciation, which is essential for alleviating burnout among healthcare workers. Finally, this is the first study to find direct relationships between spiritual leadership and outcome variables which further emphasizes its importance in predicting vital individual and organizational outcomes.

## **Burnout in healthcare**

Unique to healthcare is a work environment that consists of elevated stress and responsibilities that can lead to burnout. We consciously chose burnout instead of stress as the key outcome variable for our study because it is seen as the result of emotional, physical, and physical exhaustion that results from having to cope with stressful demands on an ongoing basis (Colquitt, LePine, and Wesson 2017). Burnout has been shown to be related to psychological and physical distress that affects the quality of patient care (Cimiotti et al. 2012; Romani and Ashkar 2014). Negative effects of job-related burnout in healthcare workers include increased staff turnover, absenteeism, job dissatisfaction, and poor health (Broome et al. 2009). One study identified 25% of physicians and other healthcare workers as burnt out (Mateen and Dorji 2009).

A meta-analysis of 65 studies of medical doctors revealed that emotional exhaustion was positively correlated with incivility, violence, low quality, negative work attitudes, work-life conflict, and poor mental health (Lee et al. 2013). Other negative outcomes of burnout in healthcare include absenteeism, poor work performance, reduced quality of healthcare delivery, and higher organizational costs (Wright 2011). Bria, Baban, and

Dumitrascu (2012) reviewed 53 empirical studies on burnout that uncovered linkages between workload to both burnout and medical errors. In another study, Khamisa, Peltzer, and Oldenburg (2013) reviewed 70 empirical studies investigating burnout in nursing from 1990 to 2012. They concluded that work-related stress was positively related to burnout and negatively related to job satisfaction.

### **Leadership and burnout in healthcare**

There is evidence that leadership may serve to attenuate the negative effects of burnout in healthcare environments, as consistency between leadership values and practices are important for motivating followers to create a positive work climate (Gilley, Gilley, and McMillan 2009; Gilmartin and D'Aunno 2007). Especially significant is the need to examine the impact of leadership on reducing healthcare worker burnout as a necessary step toward rebuilding employee well-being and work-life balance.

A review of empirical studies on leadership and burnout in healthcare revealed that transformational leadership, supportive leadership, active management-by-exception leadership, and authentic leadership have explored the most widely accepted dimensions of burnout – emotional exhaustion, depersonalization, and personal accomplishment. All of these leadership approaches negatively influenced follower emotional exhaustion (Green et al., 2014 ; Kanste 2008; Kanste, Kyngas, and Nikkila 2007; Tourangeau, Cranley, Spence-Laschinger, & Pachis, 2010). Supportive leadership, active management-by-exception, and transformational leadership positively influenced personal accomplishment (Kanste 2008; Kanste, Kyngas, and Nikkila 2007; Tourangeau et al. 2010). Additionally, management-by-exception and laissez-faire leadership are seen as undesirable leadership approaches as they positively influenced emotional exhaustion and depersonalization, while negatively impacting personal accomplishment (Kanste 2008; Kanste, Kyngas, and Nikkila 2007).

### **Burnout in medical laboratories**

It is estimated that the annual economic cost of medical errors approached \$282 billion, with laboratory errors identified as a significant causal factor (Hammerling, 2012). The medical laboratory is an essential, intricate operation comprised of a team of multi-disciplinary professionals tasked with providing accurate and timely tests results (Cortelyou-Ward, Ramirez, and Rotarius 2011). Guided by the physician order, a team of specialists processes a patient's sample based on strict guidelines. The results obtained from these tests then drive the course for patient treatment. Laboratory services are vital in 65–70% of patient diagnoses, yet their work goes essentially unnoticed until an adverse event arises (Beastall 2013).

Medical laboratory personnel are especially at risk for burnout because of increased efficiency demands, minimum operations budget, expedited turnaround times, and the consequences associated with patient errors (Muirhead et al. 2010). Research conducted on medical laboratory personnel further supports the finding that burnout is a condition that may negatively affect the patient care process.

Narainsamy and Westhuizen (2013) surveyed 202 medical laboratory staff in from two prominent private laboratories in South Africa. Results provided support for a

four-factor model of burnout (exhaustion and cynicism), engagement (vigor and dedication), occupational stress (job demands and lack of job resources) and job satisfaction (intrinsic and extrinsic satisfaction). In addition, burnout and occupational stress had a strongly negative relationship to work-related well-being. Drawing from a sample of 445 medical personnel, including laboratory technicians, nurses, and health-care managers, Kaillaith, Gillespie, and Bluedor (2000) studied three factors of burnout including depersonalization, emotional exhaustion, and personal accomplishment. Results revealed a positive correlation between emotional exhaustion, depersonalization, turnover intentions, and job search. In particular, the inability to monitor laboratory errors may contribute to burnout in medical laboratory staff (Smith, Raab, Fernald, Kamed, Lebib, Grzybicki, & West, 2013).

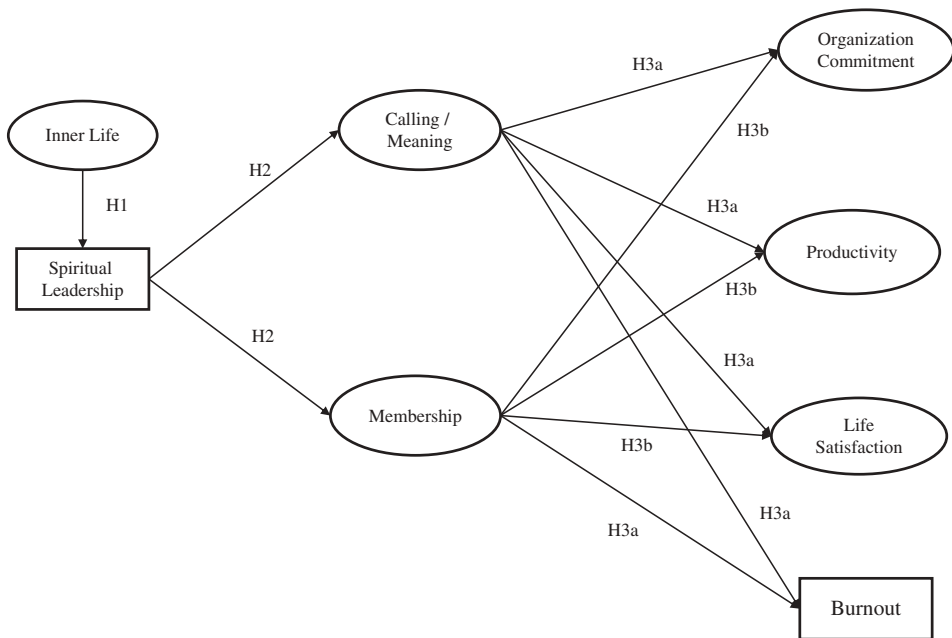
To date, no empirical studies have been conducted that examine the influence of leadership on burnout in medical laboratories. This is unfortunate as laboratory leaders are an integral component of healthcare because they facilitate patient safety, improve patient outcomes, and integrate cost-effective operations (Beastall 2013). It seems obvious that effective leadership may work to reduce follower experiences of burnout within the medical laboratory while inept leadership may lead to higher staff burnout as well as negatively affect performance and the quality of patient care (Giltinane 2013). Thus, exploring leadership models that specifically focus on employee well-being would add to our understanding of the influences and effects of burnout in medical laboratories.

### **Spiritual leadership theory**

The incorporation of such organizational and personnel outcomes is a holistic approach unique to spiritual leadership theory. The spiritual leadership model has seen extensive testing and support in a variety of organizations and cultures, including having a positive influence on organizational commitment, job satisfaction, altruism, conscientiousness, self-career management, sales growth, job involvement, identification, retention, organizational citizenship behavior, attachment, loyalty, and work unit productivity and being negatively related to interrole conflict, frustration, earning manipulation, and instrumental commitment (Fry 2003, 2005, 2008; Fry et al. 2017; Hunsaker 2016).

Spiritual leadership theory was intentionally developed and focused at the spiritual level so that it can be applied in both religious and non-religious-based organizations (Fry 2003). In spiritual leadership theory, “spirituality” is considered the animating life principle or life-breath that provides the deepest dimension of human experience: the intangible reality at the center of one’s personality. It is the universal force that drives the need for self-transcendence and the attendant feeling of interconnectedness with all things in the universe and can reside or manifest in groups and organizations (Kriger and Seng 2005). From this perspective, a religion is concerned with a theological system of beliefs, ritual prayers, rites and ceremonies, and related formalized practices. Spirituality is concerned with those qualities of the human spirit—such as love and compassion, patience tolerance, forgiveness, contentment, a sense of responsibility, a sense of wholeness and harmony, which brings happiness to both self and others (Fry 2003).

The purpose of spiritual leadership is to create vision and value congruence across the individual, empowered team, and organization to foster higher levels of employee well-being, commitment, and productivity. Spiritual leadership is sourced through an



**Figure 1.** Model of spiritual leadership.

inner life or spiritual practice that generates hope/faith in a vision of serving others through a culture based on altruistic values to satisfy universal spiritual needs for calling and membership (see [Figure 1](#)).

According to Fry and Nisiewicz (2013), for organizations to implement spiritual leadership, they must (1) Co-create a vision wherein both leaders and followers experience a sense of calling that their life has meaning and makes a difference (2) Put into effect an organizational culture based on the values of altruistic love whereby leaders and followers have a sense of membership, feel understood, and appreciated, and have genuine care, concern and appreciation for both self and others, and (3) Support employees' inner life, spiritual, or mindful practices to help them be more self-aware and conscious moment-to-moment and draw strength from, their humanistic, spiritual or religious beliefs, be that a Nondual Being, Higher Power, God, or philosophical/ethical teachings.

Spiritual leadership may therefore be beneficial to healthcare in general and the medical laboratory workforce in particular by positively influencing spiritual well-being since calling is seen as central to creating a sense of purpose and personal fulfillment and membership or a sense of belonging fosters team collaboration, both of which are essential and at the core of effective healthcare delivery.

## Hypotheses development

Having set the context for this research, we now offer hypotheses for each of the major components of the spiritual leadership model and their relationships ([Figure 1](#)). We refer interested readers to Fry (2003, 2008), Fry and Nisiewicz (2013), and Fry et al. (2017) for more elaborate discussions of these constructs.

### ***Inner life***

The connection between leadership and spirituality is the inner voice as the source of wisdom when making difficult personal and business decisions. Inner life is the source or basis for spiritual leadership of groups and organizations. Organizational cultures that support their worker's inner life have employees who are more likely to develop their own personal spiritual leadership through personal spiritual practice that can range from spending time in nature, prayer, meditation, reading inspirational literature, yoga, observing religious traditions, or writing in a journal (Fry and Nisiewicz, 2013). A work context that supports these practices is important for creating hope/faith in a vision of serving key stakeholders that takes place in the context of a caring or loving community.

**H<sub>1</sub>:** Inner life practice positively predicts spiritual leadership.

### ***Spiritual leadership***

Spiritual leadership intrinsically motivates workers through hope/faith in a transcendent vision of service to key stakeholders and the values of altruistic love. Hope/faith is a strong conviction that what is desired and anticipated will come to pass (Fry and Nisiewicz 2013). Vision defines the organization's fundamental aspiration, its reason for existence, and establishes a standard of excellence for exceeding the expectations of key stakeholders. Altruistic love is defined by Fry (2003, 705) as "a sense of wholeness, harmony, and well-being produced through care, concern, and appreciation for both self and others."

### ***Spiritual leadership as a higher-order construct***

We consider spiritual leadership to be a process that emerges through hope/faith in a vision of serving others through altruistic love. Altruistic love creates the belief and trust necessary for hope/faith. Hope/faith adds belief, conviction, trust, and action for performance of the work to achieve the vision. The mechanisms of this complex system in producing spiritual leadership, however, cannot be adequately deconstructed, lending toward a higher-order construct that underlies its three dimensions.

Beyond the theoretical associations, prior research showed that the three core dimensions are highly correlated (Fry, Vitucci, and Cedillo 2005). This suggests that a higher-order factor could be extracted from the correlations among the three dimensions, and that this common factor could be an important positive predictor of important individual and organizational outcomes. Subsequent research by Chen and Li (2013), Fry et al. (2017), and Hunsaker (2016) has supported this assertion,

### ***Spiritual well-being***

Calling and membership are universal human needs essential for spiritual well-being regardless of gender, race, demographic group, or culture (Fry & Nisiewicz, 2013). Through hope/faith in a vision of service to key stakeholders, workers develop a sense of calling through which they feel a sense of purpose and that their life has meaning and

makes a difference. By receiving altruistic love through the care and concern for themselves and others, employees experience membership and have a sense of belonging and community in which they feel understood and appreciated.

### **Calling**

The term calling has long been used as one of the defining characteristics of a professional who, by definition, have ethics centered on selfless service to clients/customers. Professionals feel an obligation to maintain quality standards within the profession, are dedicated to their work, and have a strong commitment to their careers. It is by providing service to others that professional healthcare workers gain a sense of calling which provides purpose, meaning, and the feeling they are making a difference in the lives of others.

### **Membership**

Membership is a sense of belonging and community that is realized through a social network and located in a specific place and time (Fry 2003). It is a universal spiritual need we all have to move beyond the isolation of one's selfish interests and have a sense of belonging or community within which one is understood, appreciated, and accepted for who they are just as they are. This sense of membership plays a crucial role in increasing resilience, happiness, and well-being. It also provides the context for our communications in terms of to whom we talk, the language we use and, to a great extent, determines what thoughts we think. Healthy interpersonal and social functioning correlates with positive human health and psychological well-being, whereas disconnection leads to despair and despondency

This suggests the following hypothesis:

**H2:** Spiritual leadership positively predicts calling and membership.

### ***The mediating role of spiritual well-being***

We further hypothesize that the positive influence of spiritual leadership on spiritual well-being through calling and membership produces positive individual and organizational outcomes such as employee life satisfaction, organizational commitment and productivity while negatively influencing or reducing burnout. This positive increase in outcomes through spiritual leadership's influence on calling and membership is based in an emergent process whereby employees with a sense of calling and membership will become more attached, loyal, and committed to the organization through satisfaction of these spiritual needs (Fry 2003). Moreover, employees who experience calling and membership and are committed to the organization's success will expend the extra effort and cooperation necessary to continuously improve productivity and other key performance metrics, feel more fulfilled by having a sense of purpose and belonging, and perceive their lives as richer and of higher quality (Fry 2003, 2005; Fry & Slocum 2008). They will also have higher levels of life satisfaction and experience less burnout because of a heightened sense of membership and emotional support from both their co-workers and the organization's culture based in the values of altruistic love.



Our theorizing and these prior results lead to our final hypotheses:

**H3a:** Calling will fully mediate the relationship between spiritual leadership and organizational commitment, productivity, life satisfaction, and burnout.

**H3b:** Membership will fully mediate the relationship between spiritual leadership and organizational commitment, productivity, life satisfaction, and burnout.

## **Method**

### ***Sample***

Invitations to participate in this study were offered to personnel currently employed in a medical laboratory in the United States through professional sites and listserves. A snowball sampling approach that allowed participants to forward the invitation email to other members practicing in the field participants was used. A total of 293 individuals participated in the survey of which 61 responses were incomplete, providing a total sample size of 235. The participants for this study were working in medical laboratories across the United States. 49 respondents were male and 186 were female.

### ***Measures***

#### ***Inner life***

The measure for inner life was adapted for this study from Fry and Nisiewicz (2013). Sample items for inner life include “I maintain an inner life or reflective practice (e.g. spending time in nature, prayer, meditation, reading inspirational literature, yoga, observing religious traditions, writing in a journal)” and “I know my thoughts play a key role in creating my experience of life” ( $\alpha = .70$ ).

#### ***Spiritual leadership and spiritual well-being***

The measures for spiritual leadership and spiritual well-being (calling and membership) were adapted for this study from Fry and Nisiewicz (2013).

#### ***Spiritual leadership***

Sample items for spiritual leadership include “The leaders in my organization walk the walk as well as talk the talk”; “The leaders in my organization are honest and without false pride”; “My organization’s vision is clear and compelling to me”; and “I demonstrate faith in my organization by doing everything I can to help us succeed” ( $\alpha = .91$ ).

#### ***Calling***

Sample calling items are “The work I do makes a difference in people’s lives” and “The work I do is meaningful to me” ( $\alpha = .81$ ).

### **Membership**

Sample items for membership are “I feel my organization appreciates me and my work” and “I feel highly regarded by my leaders” (alpha = .92).

### **Burnout**

Measurement of Burnout (alpha .88) was measured using 20 items from the Maslach Burnout Inventory – Human Services Scale (Maslach, Jackson, and Leiter 1996). Sample items include “I feel burned out by my work” and “I worry that this job is hardening me emotionally.”

### **Life satisfaction**

Measurement of life satisfaction (alpha .84) was based on the Satisfaction with Life Scale (Diener et al. 1985). Sample items include “I am satisfied with my life” and “In most ways my life is ideal.”

### **Organizational commitment**

Organizational commitment was measured using five items adapted from the measure of affective organizational commitment developed by Allen and Meyer (1990). Sample items include “I really feel as if my organization’s problems are my own” and “I talk up my organization to my friends as a great place to work for” (alpha = .86).

### **Productivity**

Productivity was measured using the unit productivity scale (alpha .87) developed by Nyhan’s (2000). Sample items include, “My work group is very productive” and “In my department, work quality is a high priority for all workers.”

## **Results**

The AMOS 22.0 SEM SPSS program was used with maximum likelihood estimation to test the spiritual leadership model (Arbuckle 2013). One of the most rigorous methodological approaches in testing the reliability and validity of factor structures is the use of confirmatory (i.e. theory-driven) factor analysis (CFA) within the framework of structural equation modeling (SEM, Byrne 2001). Structural equation modeling (SEM) is particularly valuable in inferential data analysis and hypothesis testing. It differs from common and components (exploratory) factor analysis in that SEM takes a confirmatory approach to multivariate data analysis; that is the pattern of interrelationships among the spiritual leadership constructs is specified a priori and grounded in theory.

SEM is more versatile than most other multivariate techniques because it allows for simultaneous, multiple dependent relationships between dependent and independent variables. In doing so, it extends regression analysis in that a variable may be an independent variable in relation to certain variables that follow it (e.g., spiritual leadership to calling and membership), a dependent variable (e.g., spiritual leadership as predicted by inner life), and a route for an indirect path from other variables that precede and follow it in the model (e.g., calling and membership between spiritual leadership and burnout).

Initially, dependent variables can be used as independent variables in subsequent analyses. For example, in the SLT model calling is a dependent variable for spiritual leadership but is an independent variable in its defined relationship with organizational commitment and productivity, life satisfaction, and burnout. Several previous studies have demonstrated the reliability and validity of the spiritual leadership model and its measures, including, Chen and Li (2013), Chen and Yang (2012), Fry, Vitucci, and Cedillo (2005), Fry, Latham, Clinebell, & Krahnke, (2017), Hunsaker (2016), Jeon, Passmore, Lee, & Hunsaker, (2013).

Table 1 displays the means, standard deviations, and correlations of the variables and coefficient alphas for the scales along the diagonal. We used AMOS with maximum likelihood estimation to conduct a confirmatory factor analysis to determine whether a second-order spiritual leadership factor existed and whether it explained the relationships among the three lower-order factors. To assess whether the observed covariance matrix fit our hypothesized model, we used the comparative fit index (CFI), normed fit index (NFI), incremental fit index (IFI), and standard root-mean-square error of approximation (RMSEA), which are widely recognized as appropriate for testing model fit in SEM. Results showed that the hypothesized three factor model fit the data well ( $\chi^2 = 172.088$ ;  $df = 61$ ;  $p < .000$ ; CFI = .943; IFI = .943; NFI = .915; RMSEA = .088) except for RMSEA which was slightly higher than the recommended stringent upper limit of .07 (Steiger 2007).

There is some debate concerning the thresholds to be used in making determinations of acceptable model fit. Hooper, Coughlan, and Mullen (2008) note that while fit indices are a useful guide, a structural model should also be examined with respect to substantive theory. Therefore, based on our theoretical rationale for hope/faith, vision, and altruistic love being components of a higher-order spiritual leadership construct coupled with the high intercorrelations among these variables and previous supportive findings by Fry et al. (2017) and Hunsaker (2016), we concluded that the higher-order spiritual leadership factor could be used for hypothesis testing.

### Test of the spiritual leadership model

Once again, we used AMOS with maximum likelihood estimation to assess the hypothesized model shown in Figure 1. Results demonstrated a good level of fit ( $\chi^2 = 635.320$ ;  $df = 331$ ;  $p < .000$ ; CFI = .917; IFI = .918; NFI = .843; RMSEA = .063). Prior to hypothesis testing, we examined alternative models determine if there is a model with better fit (See Table 2). A second model was tested

**Table 1.** Sample means, standard deviations, correlations, and reliabilities.

	M	SD	1	2	3	4	5	6	7	8
1. Inner Life	4.03	.61	<b>.70</b>							
2. Spiritual Leadership	3.85	.65	.43**	<b>.91</b>						
3. Calling	4.45	.58	.52**	.43**	<b>.81</b>					
4. Membership	3.83	.86	.28**	.73**	.32**	<b>.92</b>				
5. Life satisfaction	3.75	.70	.43**	.40**	.36**	.26**	<b>.84</b>			
6. Productivity	3.75	.88	.33**	.73**	.23**	.66**	.25**	<b>.87</b>		
7. Organizational commitment	3.77	.85	.34**	.77**	.38**	.79**	.36**	.71**	<b>.86</b>	
8. Burnout	2.31	.94	-.23**	-.44**	-.20**	-.45**	-.28**	-.40**	-.47**	<b>.88</b>

$N = 235$ ; \*\*. Correlation is significant at the 0.01 level (2-tailed). Scale reliabilities are bolded on the diagonal.

**Table 2.** Comparison of fit between hypothesized and alternative spiritual leadership models.

Model	Model & Structure	CFI	IFI	NFI	RMSEA
I *	Inner life → spiritual leadership → calling + membership → organizational commitment + productivity + life satisfaction + burnout	.917	.918	.843	.063
II	Inner life → spiritual leadership → organizational commitment + productivity + life satisfaction + burnout	.861	.863	.793	.080
III	Inner life → calling + membership → spiritual leadership → organizational commitment + productivity + life satisfaction + burnout	.899	.900	.826	.069
IV	Inner life → spiritual leadership → calling + membership → organizational commitment + productivity + life satisfaction + burnout; spiritual leadership → organizational commitment + productivity + life satisfaction + burnout	.923	.924	.848	.060

\*Hypothesized SL Model.

with the calling and membership paths omitted (e.g. inner life → spiritual leadership → organizational commitment + productivity + life satisfaction + burnout). This model demonstrated a much poorer fit to the data relative to the hypothesized model ( $\chi^2 = 836.618$ ;  $df = 329$ ;  $p < .000$ ; CFI = .861; IFI = .863; NFI = .793; RMSEA = .080), therefore, providing support for the hypothesized model.

A third model was tested with the construct order changed (e.g., inner life → calling + membership → spiritual leadership → organizational commitment + productivity + life satisfaction + burnout). This model demonstrated a much poorer fit relative to the hypothesized model ( $\chi^2 = 707.677$ ;  $df = 336$ ;  $p < .000$ ; CFI = .899; IFI = .900; NFI = .826; RMSEA = .069).

Finally, a fourth model was tested by adding direct paths from spiritual leadership to the outcomes (e.g., inner life → spiritual leadership → calling + membership → organizational commitment + productivity + life satisfaction + burnout; spiritual leadership → organizational commitment + productivity + life satisfaction + burnout). This model demonstrated a slightly better fit than the hypothesized model ( $\chi^2 = 614.436$ ;  $df = 332$ ;  $p < .000$ ; CFI = .923; IFI = .924; NFI = .848; RMSEA = .060).

**Chi-square ( $\chi^2$ ) test for model significance**

Adding the direct paths from spiritual leadership to outcomes of the fourth model showed an improved fit. Therefore, a Chi-square difference test is called for to determine if the differences in model fit are statistically different. If the difference between two SEM models is significant, this implies that the model with better fit explains the data better. If there is no significant difference between two models, this implies that the more parsimonious model explains the data equally well compared to the fuller model and is preferred (Werner & Shermelleh-Engel, 2010).

To accept the hypotheses that the hypothesized model and the fourth model are significantly different, the critical value of the  $\chi^2$  must surpass 18.27. Results demonstrated the alternative model was significant and surpassed the critical threshold at 28.392. Therefore, the fourth model demonstrated best fit and was selected for hypothesis testing.

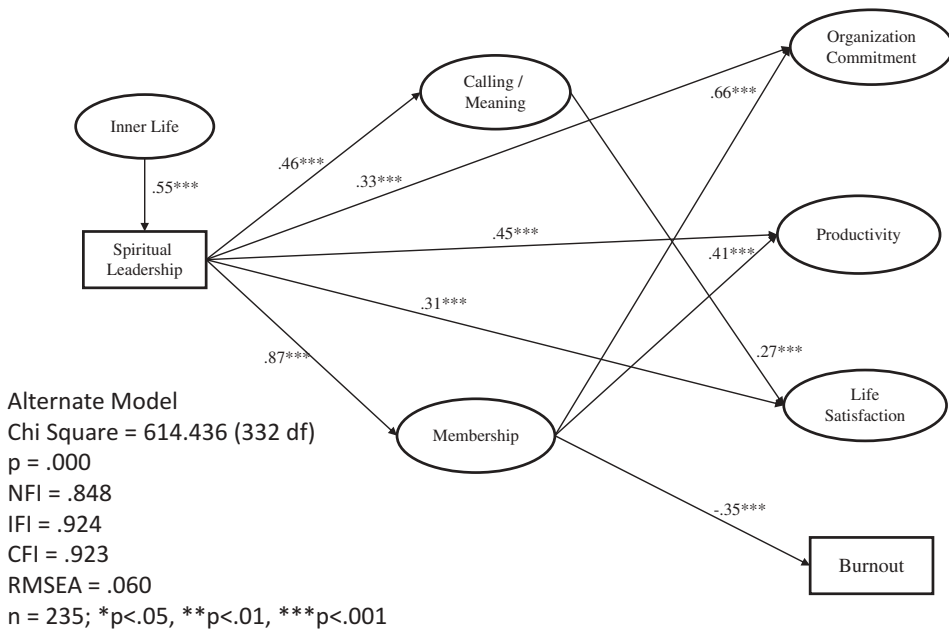


Figure 2. Results of test of alternative spiritual leadership model.

**Test of hypotheses**

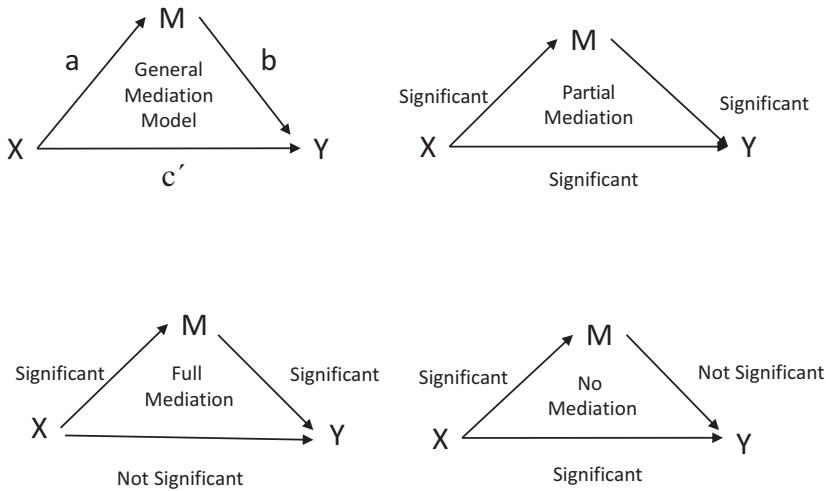
Figure 2 shows the alternative model with direct paths from spiritual leadership to relevant outcomes added to the hypothesized model. Nonsignificant paths are not shown for ease of interpretation. Hypothesis 1 predicted inner life practice would be positively related to spiritual leadership. The results revealed that the paths from inner life to spiritual leadership were positive and significant ( $\beta = .55, p < .001$ ). Thus hypothesis 1 was supported.

Hypothesis 2 predicted spiritual leadership would be positively related to calling and membership. Referencing Figure 2, the paths from spiritual leadership to calling ( $\beta = .46, p < .001$ ) and membership ( $\beta = .87, p < .001$ ) were positive and significant and, therefore, hypothesis 2 was supported.

**Test of mediation hypotheses**

Mediation analyses illuminate the processes that encompass a wide range of variables used to examine the underlying relationship for observed constructs (Ledgerwood and Shrout 2011). Mediation outcomes consist of three types including: (a) full mediation, (b) partial mediation, and (c) no mediation (Aguinis, Edwards, and Bradley 2016). Referencing Figure 3, full mediation occurs when a and b are significant but c is not significant. Partial mediation occurs when a, b, and c are significant. No mediation occurs when a and c are significant but b is not. To date, research on spiritual leadership has supported full mediation (Benefiel, Fry, and Geigle 2014; Fry et al. 2017).

Hypothesis 3a predicted calling will fully mediate the relationship between spiritual leadership and organizational commitment, productivity, life satisfaction, and burnout. The full mediation hypothesis would be supported if the model fit is not improved by



**Figure 3.** Examples of mediation models.

adding direct paths from spiritual leaderships to organizational commitment, productivity, life satisfaction, and burnout. Significant paths from both calling and spiritual leadership to outcomes would indicate partial mediation (Aguinis, Edwards, and Bradley 2016). Referencing Figure 2, calling partially mediated spiritual leadership and life satisfaction. Calling did not mediate, either fully or partially, the relationship between spiritual leadership and organizational commitment, productivity, and burnout. Based on these results, hypothesis 3a was partially supported.

Hypothesis 3b predicted membership will fully mediate the relationship between spiritual leadership and organizational commitment, productivity, life satisfaction, and burnout. Membership partially mediated the relationships between spiritual leadership and organizational commitment and between spiritual leadership and productivity. Membership did not mediate, either fully or partially, the relationship between spiritual leadership and life satisfaction. As predicted and most importantly for this study, membership fully mediated the relationship between spiritual leadership and burnout. Based on these results, hypothesis 3b was partially supported.

## Discussion

This study examining medical laboratory workers found general support for the spiritual leadership model’s positive influence on organizational commitment and unit productivity and life satisfaction, which are considered to be critical results necessary for performance excellence (Fry et al. 2017). Results also confirmed the hypothesis that membership fully mediated the relationship between spiritual leadership and burnout. Moreover, the high degree of fit for the overall spiritual leadership model provides support for the hypothesis that together the variables comprising spiritual leadership (i.e. hope/faith, vision, and altruistic love) form a higher-order formative construct that positively influences spiritual well-being (i.e. calling and membership). These findings further support that there is a positive and significant

link from spiritual leadership, both fully and partially mediated through membership and calling, to key outcome variables, thereby providing further evidence that leaders who emphasize spiritual well-being in the workplace produces beneficial personal and organizational outcomes (Benefiel, Fry, and Geigle 2014).

### ***Theoretical implications***

Most surprising were the findings that the impact of membership overshadowed that of calling and the partial, rather than full, mediation of membership on organization commitment and unit productivity. In addition, as predicted and most central to this study, membership fully mediated the relationship between spiritual leadership and burnout.

### ***Calling***

Hypothesis 3a received limited support. Calling partially mediated the relationship between spiritual leadership and life satisfaction, which runs counter to the only other study that tested a competing spiritual leadership model with direct relationships from spiritual leadership to outcomes (Fry et al. 2017). Moreover, this was the only significant finding for this hypothesis. Also counter to Fry et al. (2017), calling did not mediate the relationships between spiritual leadership and organizational commitment and productivity. One explanation may be that it is not uncommon for medical laboratories to be segregated away from patients and positioned in remote locations of the facilities, thus limiting feedback on how their work makes a difference with patients, unless it comes directly from the leader. This would then explain the significant direct effect of spiritual leadership on these outcomes. Regardless, more research is needed before any definitive conclusion can be drawn.

Interestingly, calling did not mediate the relationship between spiritual leadership and burnout. The absence of a relationship between calling and burnout was an unexpected finding. It is also the only outcome that did not have a significant direct relationship with spiritual leadership. A possible explanation may be due to the overriding influence of membership, which will be discussed in more detail in the next section.

### ***Membership***

Hypothesis 3b was more strongly supported than hypothesis 3a. Membership partially mediated the relationship between spiritual leadership and organizational commitment and productivity, which runs counter to the prior finding that reported full mediation (Fry, Vitucci, and Cedillo 2005; Fry et al. 2017; Jeon et al. 2013). In contrast to this prior research, membership did not significantly influence life satisfaction and thus had no mediating effect on this variable.

This is the first study of burnout within the context of the spiritual leadership model, thereby establishing heightened interest for the study of the influence of spiritual leadership on this important individual outcome. In support of hypothesis 3b, membership fully mediated the relationship between spiritual and burnout. The relationship observed between spiritual leadership, membership, and burnout may be further explained for medical laboratories by the rationale that medical laboratory professionals frequently work in a team setting. To produce a lab result, the specimen may be handled by many different personnel. Therefore, the workflow is largely dependent

on team members to perform their tasks efficiently and accurately. This may be a reason spiritual leadership acts to reduce burnout by positively influencing workers' sense of membership but has no significant direct effect. It may also provide the rationale for the lessened impact of calling.

### ***Practical implications***

The results of this study suggests that spiritual leadership in the medical laboratory healthcare setting does have a positive influence on personal and organizational outcomes. Further developing the characteristics of a spiritual leader may allow members of the laboratory to cultivate a desirable workplace culture. In addition to the positive relationship observed from spiritual leadership, membership is in particular important contributor to reduced burnout.

Membership is the universal prompting agent that pushes individuals to progress past isolation and develop a sense of belonging while satisfying the need to be understood and appreciated (Fry and Nisiewicz 2013). Therefore, the leader's decisions affecting the team may require careful consideration. For example, involving team members during the interview process may be beneficial. Consultation with the team ensures that new members who join the team at some level match the current dynamics and expectations. Based on the outcomes of this study, team involvement during significant change processes may be an approach worth consideration for optimizing workplace productivity and commitment.

A challenge when implementing spiritual leadership in the medical laboratory is the negative connotation associated with the term spiritual. Secular organizations may desire a neutral term for the leadership model to avoid negative reactions from those who may associate the word spiritual with religion. Concerns arise regarding employee and employer's expression of belief without judgment while balancing respective parties' legal rights has proven challenging (Benefiel, Fry, and Geigle 2014).

In addition, fostering voluntary programs may be beneficial for implementing workplace spirituality through several management practices, such as (Fry and Nisiewicz 2013):

- Sponsor company-wide mindfulness training
- A brief moment of silence before meetings
- A room for silence; spiritual support groups
- Corporate chaplains/spiritual directors for confidential inner spiritual guidance and support
- Providing employees with coaching and mentoring opportunities from technical and leadership development and formation to personal vision statements
- Supporting a context for conversations among workers about soul needs, personal fulfillment, and spiritual aspirations
- A library that loans spiritual and religious materials

### ***Suggestions for future research***

Specific to this study, opportunities for future research include further assessment of medical laboratory personnel in the US as well as on an international level. The



evaluation of the effects of spiritual leadership in medical laboratories in other countries will help to determine whether work conditions in the United States are comparable and may identify additional factors that affect burnout. Assessing work conditions in foreign medical laboratories will provide valuable insight allowing for a more comprehensive workplace model for laboratory professionals.

It is clear that more research is needed to tease out the partial versus full mediating effects of calling and membership between spiritual leadership and outcomes. The mixed results concerning the partial and full mediation effects for this versus the one other studies to date (Fry, Vitucci, and Cedillo 2005; Fry et al. 2017; Jeon et al. 2013; Hunsaker 2016) is an important area for further exploration. To date, though only Fry et al. (2017) investigated alternative models that may have better fit than the hypothesized model. In that study, the original hypothesized model and alternative model had essentially the same level of fit and were not significantly different. In this study, although statistically different, the absolute or practical difference in fit between these is minimal (CFI = .917; IFI = .918; NFI = .843; RMSEA = .063 versus CFI = .923; IFI = .924; NFI = .848; RMSEA = .060). Regardless of whether there is full or partial mediation, leaders should work to further develop their spiritual leadership skills if they want to positively influence spiritual well-being through calling and membership as well as important individual and organizational outcomes.

There is also the finding that, contrary to the fundamental hypothesis that the effect of calling and membership on outcome variables are both equal. Calling only positively influenced life satisfaction, while membership affected organization commitment, productivity, and burnout. This is in contrast to Fry et al. (2017) and Jeon et al. (2013) that found both calling and membership to have equal significance as hypothesized.

One important avenue for teasing out the differences noted here would be to conduct qualitative research studies to explore the deeper meaning of the interplay among the variables in the spiritual leadership model. Quantitative methods identify and explain trends while qualitative approaches develop the understanding of phenomenon derived from information determined by the study, participants, researcher, and context. Qualitative research is more likely to capture or discover the subtleties and complexities about the research subjects and/or fundamental research question often missed by more positivistic enquiries.

## Conclusion

Healthcare leaders are a critical for their organization's success. Within this context, effective leadership of medical laboratory services to mitigate the negative effect of burnout is especially critical to patient care. Unlike prior leadership models, spiritual leadership theory incorporates leader and follower needs for spiritual well-being into a causal model that optimizes cultural and organizational effectiveness into one framework. The consistent association with the spiritual leadership model and positive organizational outcomes such as organizational commitment, productivity, life satisfaction (Benefiel, Fry, and Geigle 2014; Fry et al. 2017; Jeon et al. 2013) and the results from this study for burnout suggest that implementation of the spiritual model offers medical laboratory personnel an opportunity to find personal fulfillment while meeting operational expectations for performance excellence.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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