

LEADERSHIP ATTRIBUTES AND BEHAVIORS AS PREDICTORS OF ORGANIZATIONAL RESILIENCE IN ACADEMIC HEALTH CARE SYSTEMS

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ABSTRACT

A dearth in research exists related to how collective leadership attributes and behaviors might impact psychological capital. The purpose of this study was to explore whether or not self-efficacy, psychological empowerment, personal resilience, and leadership style were associated with or predicted organizational resilience. Met theory of resilience and resiliency framed the study. A quantitative correlational design was used. The Leader Efficacy Questionnaire, Psychological Empowerment Instrument, Connor and Davidson's Resilience Scale, Multifactor Leadership Questionnaire, and Workplace Resilience Instrument were used to collect data from frontline leaders. Intellectual stimulation ($r_s.480$, $\tau.432$, $p = .00$), personal resilience ($r_s.483$, $\tau.465$, $p = .00$), and self-efficacy ($r_s.522$, $\tau.462$, $p = .00$) had the highest statistical correlations to organizational resilience. Negative predictor effects were found for personal resilience and idealized attributes that were ascribed to self-oriented versus other-oriented resilience qualities, $\chi^2(2) = 50.70$, $p < .01$, and $p < .05$ respectively.

Keywords: Effective pedagogics, quality teaching, quality assurance, learning outcomes, quality enhancement

INTRODUCTION

Health care system resiliency can be a valuable coping strategy amidst the daily uncertainties that healthcare systems face. Resilient leaders with the courage and confidence to take purposeful action are able to direct these qualities inward to preserve organizational survival

in response to the forces of change. It is in the interest of organizations to articulate the desired leadership attributes and behaviors that best fit their organizational culture. Findings of this study supported correlative associations among self-efficacy, psychological empowerment, personal resilience, and leadership style with organizational resilience.

Health care organizations face external pressures generated by the political, economic, and technological forces of health care reform as well as internal pressures brought about by the physical, psychological, and socioecological complexities of the populations served. The problem is that organizations hire leaders based on leadership experience without benefit of knowing how a leader might contribute to the collective leadership effect. This is important because a cogent connection can be made from leadership behavior to member behavior, hence organizational culture. The purpose of this study was to explore how self-efficacy, psychological empowerment, personal resilience, and leadership style might be associated with or predict organizational resilience among frontline leaders working in medical centers. Previous studies focused on psychological empowerment and resilience as a personality traits though yet lacked clarity in regard to the operationalized of constructs (Burnard & Bhamra, 2011; Cross, 2015; Earvolino-Ramirez, 2007; Fletcher & Sarkar, 2013; Francis & Bekera, 2014; Furlong, Harris, & Weaver, 2014; Hutter, Kuhlicke, Glade, & Felgentreff, 2013; Rutter, 2012). Studies focused on resilience as a personality trait but not on resilience as a coping strategy associated with organizational adaptation (Gillespie, Chaboyer, Wallis, & Grimbeek, 2007; McDonald, Jackson, Vickers, & Wilkes, 2015; Wei & Taormina, 2014). An exhaustive review of literature yielded no published studies that explored relationships among self-efficacy, psychological empowerment, personal resilience, and leadership style as they might relate to overall organizational resilience.

Resilient organizations have a corporate social responsibility to work with community leadership to restore and sustain the ecological, economic, and social capital in the communities they serve (Institute of Medicine, 2015). Medical centers tend to provide services within economically challenged inner city neighbourhoods to individuals with social determinants that affect health (e.g., low socioeconomic standard of living, social isolation, limited health literacy), provide employment for residents living within those communities, and support additional community jobs and economic activity from goods and services purchased (American Hospital Association, 2015; Shi & Singh, 2012; van der Vegt, **Essens, Wahlstrom & George**, 2015). Strong leadership within thriving organizations can be directed toward corporate social responsibilities. In turn organizational leaders working in tandem with community leadership can inspire collective community efficacy to take intentional action toward healthier populations and healthier community environments.

Material and Methods

A quantitative correlational design was used to evaluate associations and predictions among self-efficacy, psychological empowerment, personal resilience, leadership style, and organizational resilience via participant self-reported questionnaires from a convenience sample. It was known that use of a correlational design could pose threats to internal validity in terms of temporal ambiguity, participant selection bias, history of concurrent events, maturation of naturally occurring change, participant attrition, testing effects of self-reported data, and variability related to instrumentation measurement. Previous research addressed resilience among paramedics (Gayton & Lovell, 2012), nurses (Gabriel, Diefendorff, & Erickson, 2011; Maynard, Luciano, D'Innocenzo, & Mathieu, 2014; Pines et al., 2014), frontline and middle hospital managers (Gaugue, 2015; Kim & Windsor, 2015;), nursing executives (Mallak, 1998), and physicians (Mache, Vitzthum, Wanke, Groneberg, Klapp, & Danzer, 2014; Peng et al., 2012; Sood, Sharma, Schroeder & Gorman

(2014). Psychological empowerment has also been studied among nurses (Kraimer, Seibert, & Liden, 1999) whereas available leadership studies had not specifically included a population of health care leaders. Studies whose identified population related to frontline leaders whose supervisory role included leading licensed professions practicing at the point of service were most relevant to this study. The accessible population was composed of approximately 346 leaders who supervised licensed health care professions who delivered patient care in two inpatient and 14 outpatient settings within an academic health care system in the Midwest.

Leaders who had supervisory roles leading non-licensed health care providers were excluded from study participation. The sampling frame was obtained via a patient services leadership e-mail list and an organizational intranet search within the study setting from which all leaders at the time of study recruitment were invited to participate. Data collection commenced in summer of 2016 post notification that the study was exempted by the site IRB. An informed consent was attached to the recruitment e-mail however voluntary initiation of the instruments was indicative of participants opting into the study. If participants responded no they did not consent to participate or no that they did not meet the study inclusion criteria responses were not included in aggregated data analysis. Demographics- gender, age range, years of professional and leadership experience- were also collected.

A confidence interval of 95% was used so that 95 out of 100 intervals constructed from the sample population of the same sample size would contain the true population mean parameter ([Fulton, Mendez, Bastain, & Musal, 2012](#)). To reduce the risk of Type II errors, G*Power (Faul, Erdfelder, Lang, & Buchner, 2007), a free standing power analysis program, was used to input

significance level, stated statistical power, and effect size to determine an a priori sample size. No relevant variable relationships were found in the literature, therefore an effect size of 0.3 as a moderate linear correlation for social sciences research was used that estimated that a sample size of 82 participants was needed with 80% statistical power and an alpha of .05 for the correlation coefficient and for multinomial regression $p_1 = .30$ and $p_2 = .70$ with a .7/.3 odds ratios = 5.44 for predictor X_1 with a normal distribution that estimated a sample size of 122 participants. According to Hsieh (1989), a univariate logistic regression with 50 scores at one standard deviation above the mean when $\alpha = .05$ and $1 - \beta = .80$ would require a sample size between 126 and 164 participants or 97 to 126 participants if $\beta = .70$.

Permission for use of all questionnaires was received prior to data collection in the summer of 2016. Recruitment flyers were sent to 339 potentially eligible participants. Out of 339 emails sent, 170 participants clicked on the link to start the leadership survey. It was noted that not every person on the management e-mail list may have been leaders or had role responsibilities that did not meet the inclusion criteria. Instruments were administered via a Research Electronic Data Capture (REDCap), a secure, web-based application designed to support data capture inclusive of validated data entry, audit trails, and data download to statistical packages (Harris, Taylor, Thielke, Payne, Gonzalez, & Conde, 2009). At the end of the data collection period 94 participants participated for a 28% completion rate indicative of sufficient power to perform the correlation coefficient but not sufficiently powered for predictive analysis.

Theoretical Foundation

Richardson's (2002) resilience metatheory was used as the theoretical framework for this study. Resilience theory was originally viewed as an individual trait inherent to one's personality (Fletcher & Sarkar, 2013) then extended it to include protective factors resultant in a coping strategy that allowed one to bounce back from psychological stressors (Earvolino-Ramirez, 2007; Rutter, 2012) and it has emerged into metatheory conceptualized from a socioecological perspective of how individuals deploy adaptive processes within systems. Stressors or challenges preclude the need for resilience and may culminate in positive adaptation, dysfunction, or disintegration (Fletcher & Sarkar, 2013). The construct of personal resilience originated from the behavioral and social sciences, whereas organizational resilience emerged out of natural science and subsequently was applied to organizational systems (Le Coze, 2015).

The concept of psychological empowerment is built upon the context of leaders' perceptions of authority and resources to engage in decisionmaking and execute action (Conger & Kananga, 1988; Maynard, Gilson & Mathieu 2012; Thomas & Velthouse, 1990). It is through

psychological empowerment and the empowerment of others that mutual trust is developed and proxy agency the reliance on others is supported (Bandura, 1997, 2001). A transformational style is advantageous when there is a need to understand pressing organizational issues, enhance social networking, or communicate change goals, yet a transactional style is fundamental for task direction vital to achieving desired outcomes (Clarke, 2013). There are situational contexts when leaders are obligated to take intentional action without benefit of knowing whether or not positive or negative results will ensue (Weick, 2009). Resilience provides the incentive to confront issues and overcome barriers so that new learning and adaptation can occur (Howard & Irving, 2013; Li et al., 2012). Pieterse, Van Knippenberg, Schippers, and Stam's (2010) found demonstrated a statistically significant positive relationship between psychosocial empowerment and transformational leadership ($b = .29$, $\beta = .25$, $p = .03$).

From a system perspective organizations that employ sense making when faced with disruptions are more likely to implement a resilient and adaptive response followed by organizational learning (Francis & Bekera, 2014; Lee et al., 2013; Maitlis & Christianson, 2014; Thiel, Bagdasarov, Harkrider, Johnson & Mumford, 2012). Organizational adaptive capacity is strengthened when resilience strategies are executed, silos are minimized, sufficient resource capacity is available, staff is engagement, information and knowledge are shared, effective leadership is present, and the opportunity for innovation, creativity, participatory decision making, and situational monitoring exists (Lee, [Vargo, & Seville](#), 2013). Reason (2000) equated high reliability organizations with resilient systems. High reliability organizations are preoccupied with failure, have a reluctance to simplify interpretations, defer to those with the expertise, sensitive to operational processes, and committed to being resilient (Weick & Sutcliffe, 2007).

Results

Data were uploaded into SPSS statistical analytical software to perform Spearman's rho and Kendall's tau coefficients. Multinomial logistic regression with bootstrapping at 1,000 replications was conducted to determine if predictive relationships among personal resilience, idealized attributes a component of transformational leadership, and organizational resilience could be statistically supported. Demographic data related to gender, years of professional experience, and years of leadership experience were found to be skewed therefore not included in variable analysis. The alternative hypothesis that stated that statistically significant relationship among self-efficacy, psychological empowerment, personal resilience leadership style, and organizational resilience would exist was accepted. Intellectual stimulation had the

strongest association to organizational resilience, closely followed by personal resilience, and self-efficacy.

Cronbach alphas were also performed in SPSS based on all completed scales to determine alphas- $N = 105$ for the 22-item Leadership Self-Efficacy instrument $\alpha .92$, $N = 111$ for the 12-item Psychological Empowerment instrument $\alpha .91$, $N = 117$ for the 25-item CD RISC personal resilience instrument $\alpha .89$, $N = 111$ for the Multifactorial Leadership Questionnaire $\alpha .90$ for the instrument in its entire 45-item instrument- $\alpha .64$ for the 4-item idealized attributes subscale, $\alpha .77$ for the 4-item idealized behaviors subscale, $\alpha .81$ for the 4-item inspirational motivation subscale, $\alpha .72$ for the 4-item intellectual stimulation subscale, $\alpha .67$ for the 4-item individualized consideration subscale, $\alpha .62$ for the 4-item contingent reward subscale, $\alpha .67$ for the 4-item management by exception active subscale, $\alpha .62$ for the 4-item management by exception passive subscale, and $\alpha .38$ for the 4-item laissez-faire 2-item subscale, and $N = 100$ for the 20-item Organizational instrument $\alpha .92$.

SPSS was used to test for multicollinearity variables. All were found to have tolerance values greater than 0.1 with VIF values less than 10 with individual consideration, contingent reward, and management by exception active and passive, and laissez faire styles with condition indexes 15 or above variance proportions did not approximate 90%. Eigenvalues for inspirational motivation, intellectual stimulation, and individual consideration were .095, .084, and .070 respectively. It was postulated that self-efficacy, psychological empowerment, and personal resilience may have multicollinearity problems therefore entered as a group into diagnostics with all condition indices exceeding a value of 15 and an 82% portion of variance on the psychological empower instrument affiliated with self-efficacy. All of these stated values are indicative of multicollinearity therefore only personal resilience and idealized influence were entered into the model. Via multinomial regression model personal resilience and idealized attributes were found to have a statistically significant negative association with organizational resilience. These findings were unexpected not logically explained in the presence of existing resilience metatheory.

Discussion

Based on the literature, self-efficacy are reinforced and personal resilience can be strengthened by a transformational leadership style, psychosocial support, and intellectual stimulation (Hannah, Avolio, Luthans, & Harms, 2008). Leadership intellectual stimulation, idealized influence, inspirational motivation, and individualized consideration were reported to promote positive emotions that can enhance member resilience (Sutcliffe & Vogus, 2003). Leaders who provided intellectual stimulation and individualized consideration added to

members 'available coping reserves to draw upon and apply when faced with complex or challenging situations (Kaplan, Corina, Ruark, LaPort, & Nicolaides, 2014). Somers, Howell, and Hadley (2015) found that positive emotions had a statistically significant positive association with individual resilience ($\gamma = .35, p < .001$) and that transformational leadership was positively related to positive affect ($\gamma = .33, p < .001$) during crisis. Satici (2016) and Goodman, Disabato, Kashdan, and Machell (in press) concluded that hope was a significant mediator (bootstrap estimate = 0.25, 95%CI = 0.13, 0.40) and (*Std Coef* = .045, $t = 2.34, p < .05$) respectively between resilience and wellbeing. Hope, similar to self-efficacy, corroborates the belief that action to manage stressors will play a role in outcome achievement. In a study of Canadian teachers (Boudrias et al., 2014), personal resources (.825) and social-organizational resources (.0.94) akin to perceived psychological empowerment had a predictive effect on personal health and wellbeing at work, although specific predictors related to organizational resilience were not found in the literature.

It is possible that self-efficacious individuals with perceived psychological empowerment and a propensity toward certain leadership style aspects could be drawn to organizations that are already resilient. The factors positively affecting organizational resilience may be multifactorial thus not known if variable relationships were influenced by contextual variables. Olson, Kemper, and Mahan (2015) noted that resilient, self-compassionate, and mindful pediatric residents could still be at risk for burnout and Rushton, Batcheller, Schroeder, and Donohue (2015) stated that resilience could mitigate burnout in nurses practicing in intense work settings. While resilience may thwart burnout it could be that there are times when health care providers need to direct resilient protective factors towards self as opposed to other-orient behaviors essential for organizational resilience. It is also conceivable that leadership attributes and behaviors act as modifiers for health care providers' personal resilience that may predict organizational resilience.

The predictor variables were comprised of ordinal data however organizational resilience scores ranged from 20 to 100 therefore unable to be normally distributed and necessitated grouping scores into categorical data. Statistical testing may have yielded more detailed results if the data "buckets" were smaller or an instrument allowing for a normal distribution of participant scores was used. Statistically significant negative findings from the multinomial regression model could be attributed to self-reported data indicative of leaders who hold a higher perception of personal resilience and idealized attributes in contrast to their perception of how their actions contribute to the resilience of the organization. While the CD-RISC instrument elicited personal resilience related responses approximately a third of the questions on the Organizational Resilience instrument pertained to teamwork and inter-collegial collaboration and a third addressed leadership actions under chaotic circumstances. It is not known how participants interpreted the term *chaotic*. Leaders may perceive themselves as transformational in terms of

leading change within their perceived sphere of influence that would not necessarily include working collaboratively with other leaders. Additional frontline leaders may perceive that their leadership efforts impact the organizational level.

Conclusion

The level of participant response could have been limited by historical factors such as the number of surveys that participants had been asked to respond to around and throughout the recruitment period, resultant in “survey fatigue.” Historical factors may have interfered with decisions as to opt into the study or effected participant ability to complete instruments within the requested guidelines. It is also possible that participant personal mood, motivation, and willingness to participate may have influenced participation.

Recommendations for future research include replication of the study on a broader scale within additional academic settings in order to determine if findings can be generalized beyond the stated population. Studies that explore a potential impact of variable associations (i.e., self-efficacy, psychological empowerment, personal resilience) or subcomponents of transformations leadership (i.e., idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, individualized consideration) in the absence of multicollinearity effects is needed to examine the role of each variable on organizational resilience as well as effect size. Multisite studies or a national population of health care leaders would enhance the ability to generalize findings. Replication of this study in other academic health care leadership populations, community health care leadership populations, or with varying levels of leadership within these populations may further inform the relative importance of variables. Replication of this study design in larger populations or in random samples could lend support to the applicability and generalizability of study findings. Replication of the study using a different organizational level of leadership or comparing the effect of different levels of leadership on organizational resilience would be informative. Staggering instrument completion requests over a defined length of time may enhance completion rates over shorter bursts of time. Other forms of potential self-reported data such as unstructured or semi-structured interviews or focus groups to gather relevant data could be used. In a larger population, demographics that include professional discipline of practice could provide an opportunity to evaluate as a confounding variable.

From a practice perspective, future studies on gender and leadership styles, collective leadership style on organizational commitment, and performance in large organizations need to be conducted (Singh, 2015). It would be valuable to have evidence as to how the independent variables might be related to one another (e.g., mediating, moderator). It would also be of interest to look at how leadership locus of control or attributional style might be associated with

organizational resilience. Transformational leadership theory addressed leader-follower relationships. However, future research that extends into how each sub-construct of transformational leadership might affect organizational processes that enhance an organization's ability to survive and adapt would be advantageous. It would also be constructive to have evidence as to how the subcomponents of transformational leadership might mediate or modify one another. Future researchers should focus on the organizational strengths needed to traverse unpredictable and turbulent times, the impact of resilient processes on organizations, and the variables that translate into organizational resiliency.

To advance leadership theory beyond leader-member attributional associations, future research should address construct associations that are conceptually conceived from interdisciplinary theories or metatheory to yield scientific knowledge that practically advances the affiliation of leadership attributes and behavior within meso and macro aspects of organizational systems. Based on the works of Barnard (1991), Garmezy (1991), Masten (2011), Masten and Coatsworth (1998), Rutter (1993, 2012), and Werner (1997), whether or not an individual possesses resilience is solidified in childhood with little chance of modification during adulthood. Richard's (2002) work discussed the process of using protective factors to adapt. In 2016 Richardson added the word applied to the metatheory of resilience and resiliency which postulated that resilient qualities can progress if one is open to inquiry, experiences learning, and achieves self-mastery as a result of the stressor or challenge. Thus, organizations need to deliberately select and cultivate those leadership attributes and behaviors that actively contribute to organizational resilience.

Collectively leadership and member behaviors make up organizational culture. It is important to know as organizations onboard and develop leaders with attributes and behaviors that best fit the desired culture. Health care organizations with leadership resiliency have a collective repository of knowledge, expertise, and experience to promptly respond to a rapid pace of change. Resilient leaders have an innate ability to devise solutions and adapt to substantial change therefore organizations should recruit for and onboard leaders who are in possession of high levels of resilience via screening or behavioral interviewing processes (Harvey & Martinko, 2009). Use of diagnostic tools could be beneficial in the identification of leadership potential based on key behaviors related to self-efficacy and organizational resilience—remain calm in during stressful situations, be inspirational under difficult circumstances, put forth sound solutions to stated problems, and learn from complex situations.

The leadership paradigm has shifted away from managing people toward influencing key cognitive and emotional behaviors, processes, and positive trusting relationships that make up the socioecological aspects of the organizational culture. Transformational leadership behaviors can be taught, mentored, and reinforced to enhance leaders' knowledge, skills so that leaders can

provide for idealized influence, inspirational motivation, intellectual stimulation, and individual considerations among others to create a positive force for traversing change.

In the age of corporate responsibility leaders must also be able to extend leadership behaviors outward into the community. Transformational leadership behaviors are needed engage, motivate, and empower action at the community level. Leaders must possess personal traits, personality, and coping styles bolstered by self-efficacy and within the context of support systems that psychologically empower leaders to collectively permit organizations and communities to confront and effectively deal with the stressors of internal and external forces of change and work to mitigate social determinants of health within the community.

Kotter (2001) and Goleman (1998) noted that strong management skills are essential to avoid chaos and manage complexity particularly in large organizations. To be effective leadership needs a clear understanding of organizational roles, responsibilities, goals and own accountability for achieving those goals that in complex environments necessitate that frontline leadership have the flexibility to make decisions and shift leadership responsibilities as the work requires in order to practice proficiently at the point of service. On boarding of leadership must include attitudes in addition to knowledge and skills if the organizations effectiveness is to be improved (Beer, Finnstrom, & Scharder, 2016). Leaders can enhance members organizational commitment via motivation (e.g. feedback, incentives), empowerment (e.g. information sharing, participative decision making), and skill enhancing (e.g. recruitment, training) practices when consistently applied over time can create a common mental model that will benefit the organization (Gardner, Wright, & Moynihan, 2011).

Resilient transformational leaders motivate and encourage resilient behaviors in others. The role of upper levels of leadership is to provide mentoring, coaching, direction, and support as well as coordinate resolutions when complex system issues across units, departments, or divisions arise (Scoville, Little, Rakover, Luther, & Mate, 2016). The ambiguity and varying degrees of stability faced by health care leaders and providers on a daily basis require constant leader-provider collaboration and cooperation. Waltuck (2012) stressed that in complex systems it is on the threshold of chaos where interactive effectiveness, efficiency, and a new level of energy can occur. Traversing change has become a way of life. It is through the many resilient leaders-to-provider connections that an organization can come to know resilience. Resilient organizations are born out of resilient leaders who possess transformation leadership attributes, model transformational behaviors, expect professional growth among members, and provide the requisite resources to achieve it.

Appendix

TABLE 1 PARTICIPANT CHARACTERISTICS (N = 94)*

	Millennials	Generation X	Baby boomers	Traditionalists
Measure	age 37 or less	ages 38 - 51	ages 52 - 70	Age 71 or older
Age	15 (15.9%)	42 (44.7%)	37 (39.3%)	0
Female <i>N</i> = 79	11 (13.9%)	37 (46.8%)	31 (39.2%)	0
Male <i>N</i> = 15	4 (26.6%)	5 (33.3%)	6 (40%)	0
Years of professional experience				
0 – 1 years	0	0	0	0
1 - 2 years	0	0	0	0
3 – 5 years	1 (1.0%)	0	0	0
>5 years	15 (15.9%)	41 (43.6%)	37 (39.4%)	0
Years of leadership experience				
0 – 1 years	3 (3.2%)	1 (1.0%)	1 (1.0%)	0
1 - 2 years	4 (4.3%)	3 (3.2%)	1 (1.0%)	0
3 – 5 years	4 (4.3%)	4 (4.3%)	0	0
>5 years	4 (4.3%)	35 (37.2%)	34 (36.1%)	0

Note. Out of 339 questionnaires sent, 170 participants clicked on the link to start the leadership survey with 94 participants completing all instruments per stated inclusion criteria.

*Two people clicked on the take the survey link and closed out of the survey without addressing any questions, one person noted that they did not want to participate and did not proceed past the demographic section, 12 people stated that they did not meet the inclusion criteria, and 61 people only completed part of the survey instruments. It is possible that not every person on the Patient Services manage e-mail list (i.e. population) were leaders or had role responsibilities that met the inclusion criteria thus the 339 a reasonable approximation rather than an exact number.

Table2

Summary of Spearman Rho Interco relations for Self-Efficacy, Psychological Empowerment, Personal Resilience, and Leadership Style as Associated with Organizational Resilience

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.LEQ	-	.50**	.53**	.48**	.60**	.51**	.42**	.51**	.48**	.04	-.27**	-.19	.48**
2.EMP	.50**	-	.50**	.38**	.31**	.44**	.27**	.28**	.26*	.11	-.08	-.17	.40**
3. CD RISC	.53**	.50**	-	.50**	.55**	.68**	.46**	.50**	.65**	.09	-.16	-.30**	.48**
4.IA	.48**	.38**	.50**	-	.57**	.59**	.47**	.58**	.56**	.17	-.17	-.23*	.37**
5.IB	.60**	.31**	.55**	.57**	-	.61**	.60**	.63**	.60**	.16	-.21*	-.04	.42**
6.IM	.51**	.44**	.68**	.59**	.61**	-	.41**	.51**	.60**	.05	-.20	-.20	.39**
7.IS	.42**	.27**	.46**	.46**	.60**	.41**	-	.54**	.53**	.05	-.13	-.02	.52**
8.IC	.51**	.28**	.50**	.58**	.63**	.51**	.54**	-	.61**	-.03	-.12	-.15	.38**
9.CR	.48**	.26*	.65**	.56**	.60**	.60**	.53**	.61**	-	.15	-.22*	-.24*	.39**
10. MBEA	.04	.11	.09	.17	.16	.05	.05	-.03	.15	-	.06	-.06	.44
11. MBEP	-.27**	-.08	-.16	-.18	-.21*	-.20	-.13	-.12	-.22*	.06	-	.44**	-.15
12.LF	-.19	-.17	-	-.23*	-.04	-.20	-.02	-.15	-.24*	-.06	.44**	-	-.18

			.30**										
13. Org Resil	.48**	.40**	.48**	.37**	.42**	.39**	.52**	.38**	.39**	.08	-.15	-.18	-

$p < .05$, ** $p < .01$

Table3

Summary of Kendall Tau Interco relations for Self-Efficacy, Psychological Empowerment, Personal Resilience, and Leadership Style as Associated with Organizational Resilience

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. LEQ	-	.35**	.38**	.36**	.44**	.38**	.31**	.38**	.35**	.03	-.19**	-.13	.46**
2. EMP	.35**	-	.35**	.28**	.22**	.32**	.20**	.20**	.19*	.08	-.06	-.13	.37**
3. CD RISC	.38**	.35**	-	.37**	.41**	.54**	.34**	.38**	.48**	.06	-.11	-.23**	.47**
4. IA	.36**	.28**	.37**	-	.44**	.47**	.36**	.45**	.44**	.12	-.13	-.17*	.41**
5. IB	.44**	.22**	.41**	.44**	-	.49**	.47**	.50**	.47**	.11	-.15	-.03	.42**
6. IM	.38**	.32**	.54**	.47**	.49**	-	.33**	.41**	.46**	.04	-.14	-.15	.40**
7. IS	.31**	.20**	.34**	.36*	.47**	.33**	-	.42**	.42**	.03	-.10	-.02	.43**

8. IC	.38**	.23**	.38**	.45**	.50**	.41**	.42**	-	.48**	-.01	-.09	-.11	.39**
9. CR	.35**	.19*	.48**	.44**	.47**	.46**	.42**	.48**	-	.11	-.16	-.18*	.38**
10. MBEA	.03	.08	.06	.12	.11	.04	.03	-.01	.11	-	.04	-.04	.06
11. MBE P	-.19**	-.06	-.11	-.13	-.15	-.14	-.10	-.09	-.16	.04	-	.34**	-.24**
12. LF	-.13	-.13	-.23**	-.17*	-.03	-.15	-.02	-.11	-.18*	-.04	.34**	-	-.26**
13. Org Resil	.46**	.37**	.47**	.41**	.42**	.40**	.43**	.39**	.38**	.06	-.24**	-.26**	-

* $p < .05$, ** $p < .01$

Table

4

Summary of Multinomial Regression Analysis for Variables Predicting Organizational Resilience Among Leaders Whose Role Includes Direct Supervision of Licensed Health Care Providers (N = 94)

Predictor of Organizational Score of 4 or greater	95% CI for Odds Ratio			
	<i>b</i> (<i>SE</i>)	<i>Lower</i>	<i>Odds Ratio</i>	<i>Upper</i>
Intercept	10.25(2.65)			
CD-RISC Personal Resilience	-.110(.032)**	.84	.90	.95
MLQ Transformation-Idealized Attributes	-.023(.010)*	.96	.98	.995

Note. $R^2 = .42$ (Cox & Snell), $.52$ (Nagelkerke). Model $\chi^2(2) = 50.70$, $p < .001$. * $p < .05$, ** $p < .01$, *** $p < .001$

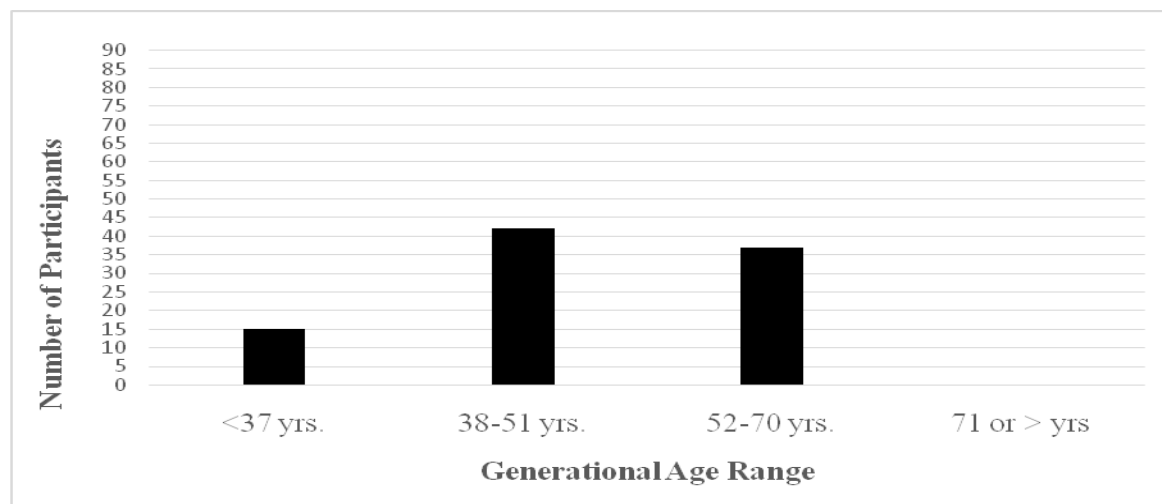


Figure 1. Participant characteristics by age.

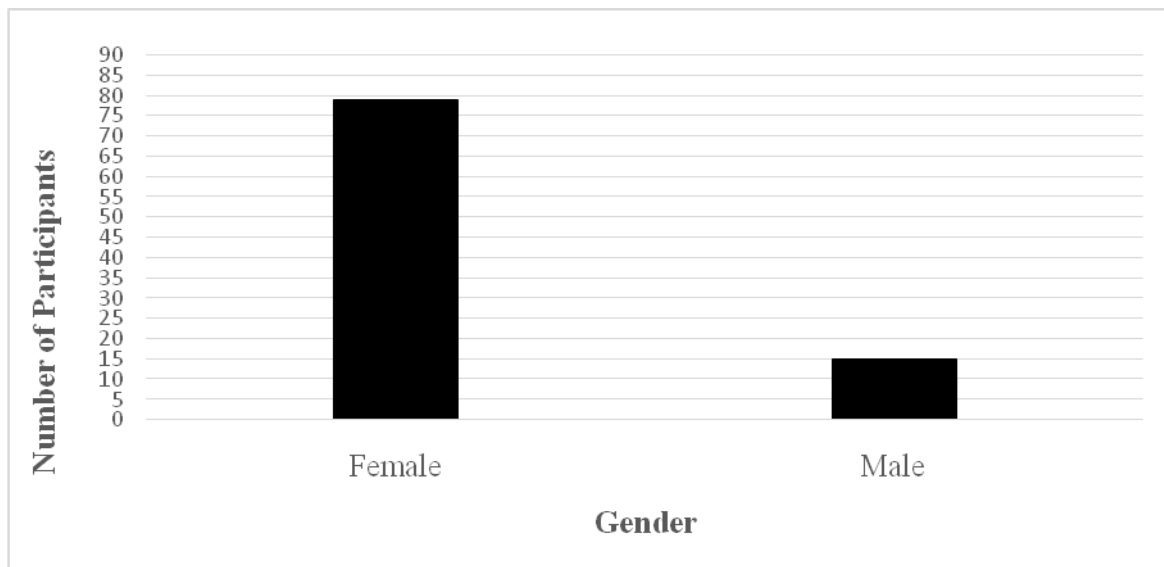


Figure 2. Participant characteristics by gender.

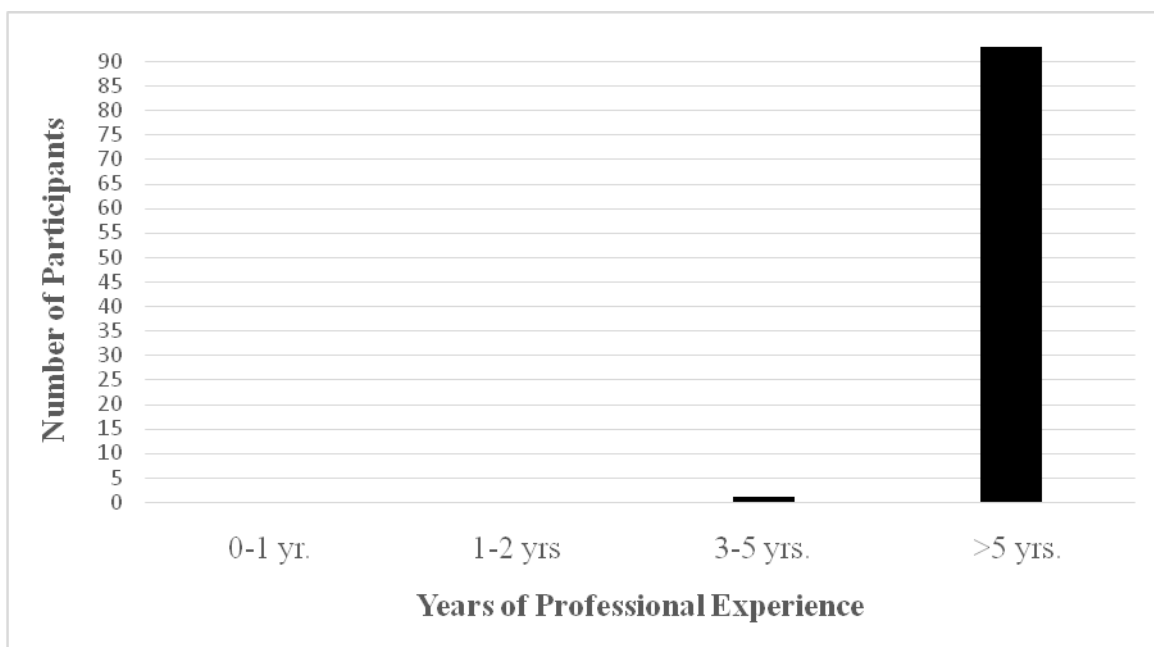


Figure 3. Participants' characteristics by years of professional experience.

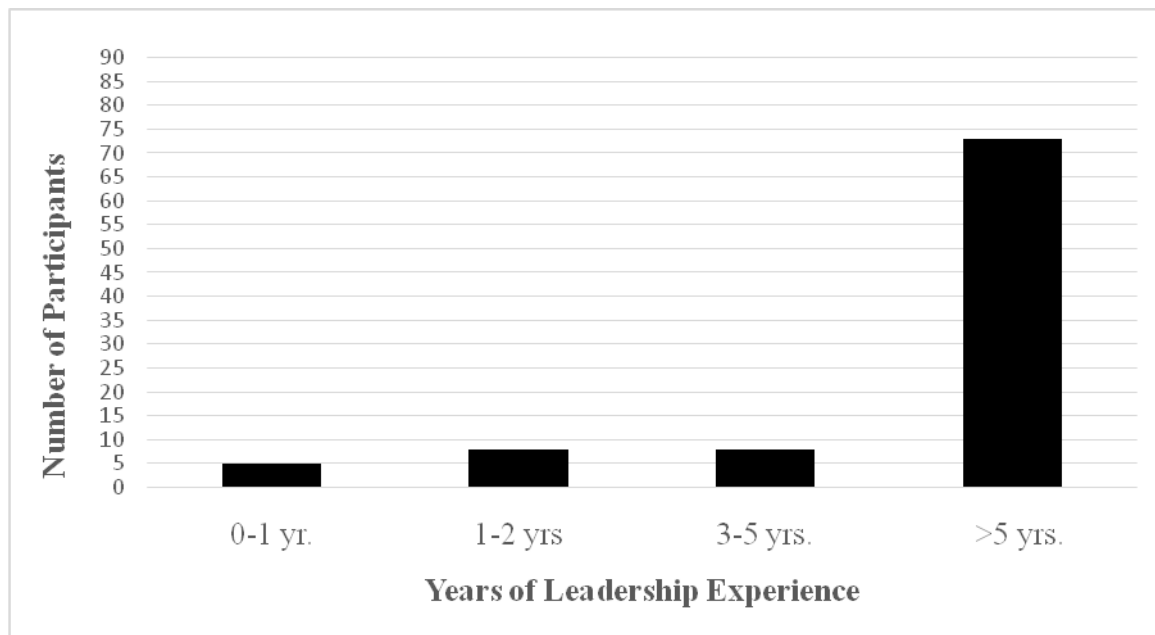


Figure 4. Participant characteristics by years of leadership.

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