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The Effects of Authentic Leadership, Six Areas of Worklife, and Occupational Coping Self-Efficacy on New Graduate Nurses' Burnout and Mental Health: A Cross-Sectional Study

Abstract

Background – New nurse burnout has personal and organizational costs. The combined effect of authentic leadership, person-job fit within areas of worklife, and occupational coping self-efficacy on new nurses' burnout and emotional wellbeing has not been investigated.

Objectives - This study tested a model linking authentic leadership, areas of worklife, occupational coping self-efficacy, burnout, and mental health among new graduate nurses. We also tested the validity of the concept of interpersonal strain at work as a facet of burnout.

Design – A cross-sectional national survey of Canadian new graduate nurses was conducted.

Participants – Registered nurses working in direct patient care in acute care settings with less than 3 years of experience were selected from provincial registry databases of 10 Canadian provinces. A total of 1009 of 3743 surveyed new graduate nurses were included in the final sample (useable response rate 27%).

Methods - Participants received a mail survey package that included a letter of information, study questionnaire, and a \$2 coffee voucher. To optimize response rates non-responders received a reminder letter four weeks after the initial mailing, followed by a second survey package four weeks after that. Ethics approval was obtained from the university ethics board prior to starting the study. Descriptive statistics and scale reliabilities were analyzed. Structural equation modeling with maximum likelihood estimation was used to test the fit between the data and the hypothesized model and to assess the factor structure of the expanded burnout measure.

Results - The hypothesized model was an acceptable fit for the data ($\chi^2 (164) = 1221.38$; χ^2 ratio = 7.447; CFI = .921; IFI = .921; RMSEA = .08). All hypothesized paths were significant. Authentic

leadership had a positive effect on areas of worklife, which in turn had a positive effect on occupational coping self-efficacy, resulting in lower burnout, which was associated with poor mental health.

Conclusions - Authentic leaders may play an important role in creating positive working conditions and strengthening new nurses' confidence that help them cope with job demands, thereby protecting them from developing burnout and poor mental health. Leadership training to develop supervisors' authentic leadership skills may promote the development of person-job fit, thereby increasing occupational self-efficacy and new nurses' wellbeing.

Keywords: authentic leadership, areas of worklife, new graduate nurses, occupational coping self-efficacy, burnout, mental health

Introduction

The demographic profile of the nursing workforce is shifting as a greater number of nurses approach retirement and increasing numbers of new graduates enter the workforce to take their place (Canadian Institute of Health Information, 2013). The transition process from student to practicing nurse can be stressful for newcomers to the profession and many struggle to build confidence in meeting job demands, often leading to burnout, a sustained response to chronic emotional and interpersonal stressors at work (Maslach & Leiter, 1997), and, subsequently, poor mental health (Laschinger & Grau, 2012; Laschinger, Grau, Finegan, & Wilk, 2010; Peterson et al., 2008; Rudman & Gustavsson, 2011). In addition to the personal toll of burnout on nurses' health, there is also evidence to suggest that early career burnout in the first two years of practice influences new nurses' desire to leave the profession (Beecroft, Dorey, & Wenton, 2008). Job and career turnover are costly for the healthcare system, resulting in lost productivity and per nurse replacement costs that have been estimated to be \$21,514 CAD (O'Brien-Pallas et al., 2006) which adjusted for inflation would be ~\$25,340 in 2014 (US Department of Labor, 2014). Given the personal and organizational costs of burnout, it is essential to provide new nurses with the support needed to develop confidence in their professional skills during this crucial transition period to prevent burnout and its negative consequences.

Leaders can make a difference in facilitating new graduate nurse transitions by creating environments that promote self-confidence and decrease stress and potential burnout. Past research has shown that empowering leadership styles such as authentic leadership can help new graduate nurses feel engaged and supported in their jobs (Giallonardo, Wong, & Iwasiw, 2010; Laschinger, Wong, & Grau, 2013) and are associated with lower levels of burnout (Laschinger, Wong, & Grau, 2012). By developing positive, honest relationships with new nurses, leaders

provide a supportive workplace that optimizes the fit between new graduate nurses' workplace expectations and their experience at work as a place where learning can occur and self-confidence can grow, thereby strengthening their intrapersonal resources. One such resource is occupational coping self-efficacy which refers to employees' appraisal and confidence that they can handle the demands of their job (Pisanti, Lombardo, Lucidi, Lazzari, & Bertini, 2008).

Higher levels of occupational coping self-efficacy have been shown to be related to lower levels of burnout among nurses (Pisanti et al., 2008). To our knowledge no studies have examined how authentic leadership may directly or indirectly influence new graduate nurses' occupational coping self-efficacy, and how these factors together influence burnout and mental health. Thus, the primary purpose of this study was to test a model linking supervisor authentic leadership behaviours with new graduate nurses' person-job fit, occupational coping self-efficacy, burnout, and mental health in the first three years of practice.

In this study we used an expanded model of burnout described by Borgogni, Consiglio, Alessandri, and Schaufeli (2012) that incorporates interpersonal strain at work as a component of burnout, in addition to the two core components (emotional exhaustion and cynicism) originally described by Maslach & Jackson (1981). Interpersonal strain at work is defined as psychological disengagement from colleagues at work in response to overwhelming social and emotional demands. This expanded model may capture a more comprehensive description of new graduate nurses' burnout than studies to date, given research suggesting that positive workplace relationships are important to new graduate nurses' transition to the workplace (Bowles & Candela, 2005). Therefore a second aim of this study was to examine the validity of this model in a previously unstudied population - new graduate nurses.

Theoretical Framework

This study integrates concepts from Avolio and Gardner's (2005) theory of authentic leadership, Maslach and Leiter's six areas of worklife model (Leiter & Maslach, 2004; Maslach & Leiter, 1997), Pisanti et al.'s (2008) conceptualization of occupational coping self-efficacy, and Borgogni et al.'s (2012) concept of interpersonal strain at work as part of the expanded model of burnout. The theoretical underpinnings of the concepts in our proposed model are described in the upcoming paragraphs.

Authentic Leadership

Luthans and Avolio (2003) described authentic leaders as leaders who are “confident, hopeful, optimistic, resilient, transparent, moral/ethical, future-oriented, and give priority to developing associates to be leaders” (p. 242). Authentic leaders are positive, transformational, moral leaders who are true to themselves and aim to bring out the best in themselves and others. They communicate their genuine selves to others through four key behaviours: relational transparency (presenting themselves as they truly are), balanced processing (considering differing points of view before making decisions), moral/ethical behaviour (acting in accordance with internal moral and ethical values), and self-awareness (having insight about self and influence on others) (Avolio & Gardner, 2005; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). Importantly, authentic leaders foster the development of their followers' intrapersonal resources such as psychological capital (Avolio & Gardner, 2005), that is, their sense of optimism, hope, resiliency, and self-efficacy. These positive psychological resources heighten followers' self-awareness and self-regulatory behaviors, contributing to positive self-development and confidence (Luthans & Avolio, 2003; Avolio & Gardner, 2005).

AL theory has gained empirical support in both the management and nursing literature. In nursing, nurses who perceive their leaders to engage in authentic behaviours feel empowered and supported in their jobs (Laschinger et al., 2012). Wong and Laschinger (2013) found that authentic leadership positively influenced nurses' performance through structural empowerment in their workplace. Bamford, Wong and Laschinger (2013) linked authentic leadership to a positive fit between nurses' job expectations and actual levels of the six basic areas of worklife proposed by Leiter and Maslach (2004): workload, control, rewards, fairness, sense of community, and value congruence. Bamford, Laschinger, and Wong (2013) also found that person-job fit among the six areas of worklife fully mediated the influence of authentic leadership on nurses' work engagement. Based on theory and research we hypothesized that will have a positive influence on areas of worklife match (H1).

Six Areas of Worklife Model

Maslach and Leiter (1997) theorized that there are six areas of worklife in which a person-job match can enhance employee engagement at work. *Workload* refers the amount of time and resources available to an employee to satisfy job demands. *Control* relates to professional autonomy and is the extent to which employees are able to make important decisions about their work. *Rewards* involve the financial, social and/or internal recognition for employee work contributions. *Community* involves the quality of working relationships with others in the organization including managers, colleagues and subordinates. *Fairness* is the extent to which decision making processes are open and respectful. Finally, *value congruence* represents the match between the organization's priorities and values and those of the employee (Maslach & Leiter 1997). In an examination of data from several databases (n = 6815), Leiter and Maslach (2004) found that the six areas of worklife were all significantly related to burnout.

Areas of worklife match (person-job fit) has also been related to intrapersonal resources, such as, psychological capital (Laschinger & Grau, 2012). It is reasonable to expect that when nurses feel that their expectations match existing conditions in the workplace, they will be more likely to meet job demands and therefore have increased self-efficacy for performing their role. We therefore hypothesized a positive relationship between areas of worklife match and occupational coping self-efficacy (H2).

Occupational Coping Self-Efficacy

Occupational coping self-efficacy, an employee's appraisal of their ability to meet job demands, is a work-related intrapersonal resource that may be developed by working with an authentic leader. Occupational coping self-efficacy is more specific than the more general notion of psychological capital (Luthans, Avolio, Avey, & Norman, 2007), in that it refers to an individual's perceived confidence in his/her ability to cope with work demands. In the occupational literature, coping self-efficacy has been associated with lower levels of strain and higher adaptive coping skills. For example, employees with high coping self-efficacy have been found to engage in proactive coping such as persistence in the face of difficulties (Schwarzer & Knoll, 2003) rather than avoiding stressors or indulging in self-soothing behaviours without addressing the situation at hand (Kraij, Garnefski, & Maes, 2002). Pisanti et al. (2008) also found that OSCE mediated the relationship between job strain and employee burnout.

Previous research has linked leadership behaviours to employee self-efficacy. For example, Manojlovich (2005) found that nurse managers' empowering leadership behaviours had a significant effect on nurses' role self-efficacy. Less is known about the relationship between authentic leadership and employees' individual characteristics. Laschinger and Fida (2014) found a positive relationship between and general self-efficacy in a study of new nurses.

To our knowledge, the relationship between authentic leadership and job-specific self-efficacy has not been examined but it is reasonable to expect that when leaders create workplaces that provide employees with conditions that match their expectations (areas of worklife match), employees would logically develop increased confidence in meeting job demands. We therefore hypothesize that authentic leadership indirectly influences nurses' occupational coping self-efficacy by fostering greater areas of worklife match (H3).

Burnout: An Expanded Model

Maslach & Jackson (1981) originally conceptualized burnout as a psychological syndrome affecting helping professionals exposed to prolonged job strain characterized by feelings of emotional exhaustion (the feeling of being emotionally depleted and worn out resulting from the individual's job), depersonalization (a lack of or detached response towards the job), and personal inefficacy (competency and success in performing the job). Later depersonalization was reconceptualized as cynicism, defined as a negative attitude towards one's work in an effort to mentally distance oneself, when the model was revised to make it more applicable to workers beyond the helping professions (Maslach & Leiter, 1997; Schaufeli, Leiter, Maslach, & Jackson, 1996). There is general agreement that emotional exhaustion and cynicism are the core elements of burnout (Maslach, Schaufeli, & Leiter, 2001). There is, however, disagreement among burnout theorists as to the status of personal accomplishment, with some suggesting that it may better reflect the concept of work engagement (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007; Schaufeli & Taris, 2005).

Recently Borgogni et al. (2012) proposed that interpersonal strain at work, defined as feelings of being uncomfortable and disengaged in relationships with others at work caused by excessive social requests and pressures, is missing from the traditional model of burnout. They

contend that this relational aspect was lost when depersonalization (the uncaring response towards patients) was later replaced by cynicism. They argue that interpersonal strain at work provides additional explanatory value to understanding the burnout phenomenon because it describes the detrimental effects of prolonged work stress on individuals' co-worker interactions.

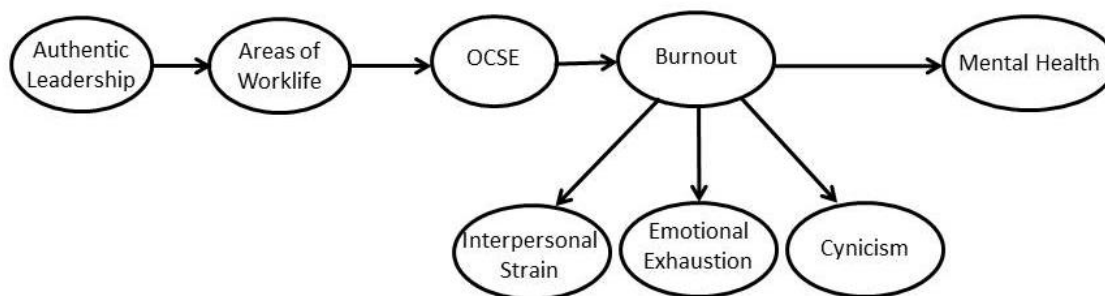
Interpersonal strain at work seems to be of particular relevance in settings where interactions with others are an essential part of one's work (Borgogni et al., 2012). There is growing empirical support for this expanded model of burnout. Borgogni et al. (2012) provided strong evidence for the construct validity of their measure of interpersonal strain at work within this three-component model. A recent study of call centre operators showed that work self-efficacy was inversely related to interpersonal strain, emotional exhaustion, and cynicism, which in turn reduced employee absenteeism (Consiglio, Borgogni, Alessandri, & Schaufeli, 2013).

Borgogni et al.'s (2012) expanded model captures the socio-emotional aspect of burnout that comes from developing and maintaining relationships with others at work. Research has shown that positive work group interactions are important for new graduates' transition to the professional work role (Bowles & Candela, 2005). In the current study we hypothesized that new graduate nurses with higher levels of occupational coping self-efficacy would experience lower levels of burnout (including interpersonal strain at work) because they believe they have sufficient personal resources to successfully deal with the demands of their job (H4). We further hypothesized that occupational coping self-efficacy mediates the relationship between areas of worklife match and burnout (H5). That is, leaders can help prevent burnout among new graduate nurses by creating supportive work environments which help them develop occupational coping skills that provide them with the confidence to meet the demands of their new professional role.

Finally, we were interested in investigating the influence of burnout on nurses' mental health and wellbeing. The detrimental health effects of burnout are well established in the literature (Abdi, Kaviani, Khaghanizadeh, & Momeni, 2007; Laschinger & Fida, 2014; Peterson et al., 2008). There is accumulating evidence supporting the positive association between burnout and ill-health (Ahola et al., 2005; Shirom, Melamed, Toker, Berliner, & Shapiro, 2005; Toppinen-Tanner et al., 2005). Furthermore, there also is evidence that burnout mediates the effect of excessive job demands on various indicators of ill-health (Ahola & Hakanen, 2007; Bakker, Demerouti, De Boer, & Schaufeli, 2003; Hakanen, Bakker, & Schaufeli, 2006; Schaufeli & Bakker, 2004). Thus, we hypothesized that new nurses' burnout would be associated with poor mental health (H6).

The overall hypothesized model is illustrated in Figure 1. To our knowledge this is the first study to test this model in the new graduate nurse population.

Figure 1. Hypothesized theoretical model



Methods

Study Design

This study used cross-sectional data of a national study of new graduate nurses working in direct care roles across Canada. Ethics approval was obtained from the university ethics board

prior to starting the study. Registered nurses with less than 3 years of experience were randomly selected from professional registry databases of 10 Canadian provinces (CIHI, 2013).

Participants received a mail survey package that included a letter of information, study questionnaire, and a \$2 coffee voucher. Using Dillman, Smyth, and Christian's (2009) procedure to optimize response rates, non-responders received a reminder letter four weeks after the initial mailing, followed by a second survey package four weeks after that. To ensure confidentiality participant surveys were coded using unique personal identification numbers.

Participants

A total of 1009 of 3743 surveyed new graduate nurses from across Canada were included in the final sample (useable response rate 27%). Eligible participants were new graduate nurses with less than 3 years of nursing experience working in direct patient care settings. Participants were not eligible for the study if they had > 3 years of nursing experience or were not currently working in direct patient care.

Instruments

Authentic Leadership

The Authentic Leadership Questionnaire (Walumbwa et al., 2008) consists of 16 items that measure four dimensions of authentic leadership behaviour: self-awareness (4 items), moral-ethical perspective (4 items), balanced processing (3 items), and transparency (5 items). Participants rate items on a 5 point Likert scale from 0 = not at all to 4 = frequently, if not always). Subscale items are summed and averaged to create subscale scores. Previous studies have supported the reliability and validity of this instrument among new graduate nurses (Cronbach's $\alpha = .91$) (Giallonardo et al., 2010). In the current study Cronbach's α was .96.

Areas of Worklife

Leiter and Maslach's (2011) Areas of Worklife Scale measures six dimensions of the work environment that contribute to employees' experience: workload, control, reward, a sense of community, fairness, and values congruence. This instrument contains 18 items rated on a Likert scale from 1 = strongly disagree to 5 = strongly agree. Five items are reverse-scored. An overall score was created by summing and averaging item scores. Cronbach's α was .81 in the current study, demonstrating acceptable scale reliability.

Occupational Coping Self-Efficacy

Pisanti et al.'s (2008) Occupational Coping Self-Efficacy scale consisting of nine items was used. Respondents rated the extent to which they believed that they would cope with stressful occupational situations on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). An overall score was created by summing and averaging the items. Higher scores indicate higher occupational coping self-efficacy. Consistent with Pisanti et al. (2008), Cronbach's α was .83 in the current study.

Burnout

Emotional exhaustion and cynicism were measured using the emotional exhaustion and cynicism subscales of the Maslach Burnout Inventory-General Survey, each consisting of 5 items rated on a 6-point Likert scale from 0 = never to 6 = daily. Interpersonal strain at work was measured using the 6-item scale validated by Borgogni et al. (2012) using the same rating scale (example item "At work, I feel more comfortable keeping distance from others"). Higher scores reflect higher levels of burnout. Each scale has demonstrated acceptable reliability and validity in past studies (Borgogni et al., 2012; Laschinger et al., 2010). In this study Cronbach's α was .82, .92, and .92 for interpersonal strain at work, emotional exhaustion, and cynicism, respectively.

Mental Health

Mental health was measured using the depressive symptoms scale of the General Health Questionnaire (Goldberg & Williams, 1988) which consists of 12 items that respondents rate on a 4-point Likert scale from 1 = not at all to 4 = much more than usual. Items were reverse coded so that high scores reflected good mental health. Past studies have shown acceptable validity and reliability (Goldberg et al., 1997; Hardy, Shapiro, Haynes, & Rick, 1999) and in this study Cronbach's α was .85.

Data Analysis

Descriptive statistics and scale reliabilities using all items for each individual scale were analyzed using the Statistical Package for the Social Sciences (SPSS), version 22.0 (IBM Corp., 2014). Data were screened for missing data and participants who did not answer any items for variables included in the model were excluded from the analysis ($n=6$). Overall, <1% of the data was missing and results from Little's MCAR test showed that these values were missing completely at random ($\chi^2(241) = 194.102, p = .991$). Mean imputation was used to replace the missing values. This method of dealing with missing data is not always recommended because in some cases it can reduce variance (Schafer & Graham, 2002). In the current study there were very few missing values and we had a large sample size therefore mean imputation was not expected to have a significant effect on the variance of the variables. In order to check this, the hypothesized model was tested with missing values and again after mean imputation. The results were identical, supporting our decision to use this method. Prior to testing the hypothesized model, a preliminary confirmatory factor analysis of the factor structure of the expanded burnout measure was conducted using structural equation modeling (SEM) analysis in AMOS, version 22.0 (IBM, 2014).

SEM with maximum likelihood estimation was used to test the fit between the data and the hypothesized model using AMOS software, version 22.0 (IBM, 2014). SEM is a statistical technique that uses the shared variances between variables (i.e. covariances) to estimate causal effects among variables (Hoyle, 2012). We used the hybrid SEM approach described by Kline (2011) which tests the effect of both manifest and latent variables simultaneously. We modeled burnout as a second-order latent model to evaluate the construct validity of Borgogni et al's (2012) new 3-factor model of burnout. The measures of other variables in the model have well-established validity; therefore, to simplify our already complex model total scores were modeled as manifest variables. The maximum likelihood estimation method approximates model parameters that are most likely to result in the observed data (Hoyle, 2012). SEM provides estimates of model fit by comparing the covariance structure of the observed data to that of the theorized model (Hoyle, 2012). A perfect fit means that there is no discrepancy between the model and the observed data.

As recommended by Kline (2011), the following fit statistics were used to assess the fit between the covariance structure of the data and the hypothesized model: Chi-square (χ^2), Chi-square ratio (χ^2/df), comparative fit index (CFI), incremental fit index (IFI), and Root Mean Square Error of Approximation (RMSEA). The χ^2 test is a goodness of fit test used to test the null hypothesis that there is no difference between the hypothesized model covariance matrix residuals and the actual covariance matrix residuals. If χ^2 is significant ($p < .05$) we accept the alternative hypothesis that there is a significant difference between the model and the data. Importantly, χ^2 increases as a function of sample size and as a result is almost always significant (Hoyle, 2012), therefore additional fit statistics were used. The chi-square ratio is calculated by dividing χ^2 by its degrees of freedom, therefore it represents the χ^2 per degrees of freedom (< 3 is

acceptable but < 2 better). The CFI represents the ratio between the discrepancy of the hypothesized model and the discrepancy of the independence model, a model where the variables are uncorrelated. The CFI represents the extent to which the model of interest is better than the independence model. Values that approach 1 indicate acceptable fit (.90 or greater is acceptable). IFI is a relative fit index that compares the hypothesized model to the independent model where none of the variables are correlated. Values range from zero, representing the worst possible model fit, to 1, representing the best possible fit. RMSEA is a measure of discrepancy between the data and the model relative to the degrees of freedom in the model (< .08 is acceptable). By examining all five of these standard fit indices, we obtain a better overall picture of the degree to which the model fits the data to evaluate the strength of the theorized causal model. Significance levels were set at $p < 0.05$ for all analyses.

Results

Participants (n=1009) were mostly female (92.5%), averaging 27.43 years of age (SD 6.35), and 1.20 years (SD .51) of nursing experience (Table 1). Most (92.8%) had a bachelor's degree in nursing and worked full-time (60.8%) or part-time (28.6%) in medical-surgical (50.5%), critical care (17.9%), or maternal-child (10.4%) specialty areas.

Table 1. Participant Characteristics (n=1009)

<i>Demographic Characteristic</i>	Mean	SD
Age	27.43	6.35
Years of Nursing Work Experience	1.20	0.51
Gender	N	%
Female	926	92.5
Male	75	7.5
Highest Level of Nursing Education	N	%
Four year BScN degree	934	92.8
College Nursing Diploma	71	7.1
Master's degree in nursing	2	0.2
Specialty of current unit	N	%

Medical-surgical	506	50.5
Critical care	179	17.9
Maternal-child	104	10.4
Mental health	61	6.1
Nursing Resource Unit/Float Pool	38	3.8
Community Health	57	5.7
Long-term Care/Rehabilitation	57	5.7
Current employment status	N	%
Full time	611	60.8
Part time	287	28.6
Casual	107	10.6

Descriptive Results for Major Study Variables

Descriptive results for main study variables are presented in Table 2. All measures demonstrated acceptable reliability (Cronbach's α .81-.95). On average, the new graduate nurses rated their supervisors' authentic leadership behaviors as 2.60 out of 4.0 (SD 0.87), areas of worklife as 3.26 out of 5 (SD 0.47), and their occupational coping self-efficacy as 3.60 out of 5.0 (SD 0.55). On average, and consistent with Consiglio's (2014) findings with Italian healthcare workers, the nurses reported higher emotional exhaustion levels (M 3.24, SD 1.48) than interpersonal strain at work and cynicism (M 1.17, SD .98 and M 1.60, SD 1.56, respectively). Emotional exhaustion levels were in the 'severe' burnout category according to Schaufeli et al.'s (1996) norms (> 3.0). Average rating of mental health was positive, 2.78 (SD 0.47) out of a possible score of 4.0.

Correlations among all study variables were significant. Authentic leadership was related to areas of worklife (.50), occupational coping self-efficacy (.20), interpersonal strain at work (-.20), emotional exhaustion (-.19), cynicism (-.25), and mental health (.22). Areas of worklife was also significantly correlated with occupational coping self-efficacy (.35), interpersonal strain at work (-.45), emotional exhaustion (-.50), cynicism (-.58), and mental health (.51). In addition

to being significantly associated with authentic leadership, occupational coping self-efficacy had significant correlations with interpersonal strain at work (-.23), emotional exhaustion (-.31), cynicism (-.35), and mental health (.38). Finally, interpersonal strain at work was related to the core burnout dimensions (.44 and .55 for emotional exhaustion and cynicism, respectively), and to mental health (-.39), consistent with Consiglio (2014).

Table 2. Means, standard deviations, and internal consistency of major study variables

Variable	M	SD	α	1	2	3	4	5	6
1. Authentic Leadership	2.60	0.87	.96	-					
2. Areas of Worklife	3.26	0.47	.81	.50	-				
3. Occupational Coping SE	3.60	0.55	.83	.20	.35	-			
4. Interpersonal Strain	1.17	0.98	.82	-.20	-.45	-.23	-		
5. Emotional Exhaustion	3.24	1.48	.92	-.19	-.50	-.31	-.44	-	
6. Cynicism	1.60	1.56	.92	-.25	-.58	-.35	-.55	.68	-
7. Mental Health (positive)	2.78	0.47	.85	.22	.51	.38	-.39	-.57	-.62

Note: All correlations significant $p < .05$

SEM Results

3-Factor Burnout Measurement Model

Burnout was modelled as a second-order latent variable consisting of three first-order latent variables, each representing a component of burnout (emotional exhaustion, cynicism, and interpersonal strain at work). Results of testing our model showed that the item factor loadings for each of the three burnout components of burnout were acceptable ($> .50$) for all items. Paths between the first-order latent variables (emotional exhaustion, cynicism, and interpersonal strain at work) and the second-order burnout latent variable were significant ($\beta = .80, .96, \text{ and } .59$, respectively).

Structural Model

The hypothesized model was supported by the model fit statistics, indicating that the data fit the hypothesized model ($\chi^2 (164) = 1221.38$; χ^2 ratio=7.447; CFI=.921; IFI=.921;

RMSEA=.08) (Figure 2). All hypothesized paths were significant at the $p < .01$ level (Table 3). authentic leadership was found to have a direct effect on areas of worklife ($\beta = .50$), which in turn had a direct effect on new graduate nurses' occupational coping self-efficacy ($\beta = .35$), and subsequently, on burnout ($\beta = -.41$); burnout subsequently had a negative effect on mental health ($\beta = -.69$). As shown in Table 3, areas of worklife significantly mediated the effect of authentic leadership on new graduate nurses' occupational coping self-efficacy ($\beta = .175$) and occupational coping self-efficacy significantly mediated the effect of areas of worklife on burnout ($\beta = .144$). Finally, the indirect effects of authentic leadership on both burnout and mental health were significant ($\beta = .072$ and $\beta = .05$, respectively). The results provide support for the hypothesized model.

Figure 2. SEM results

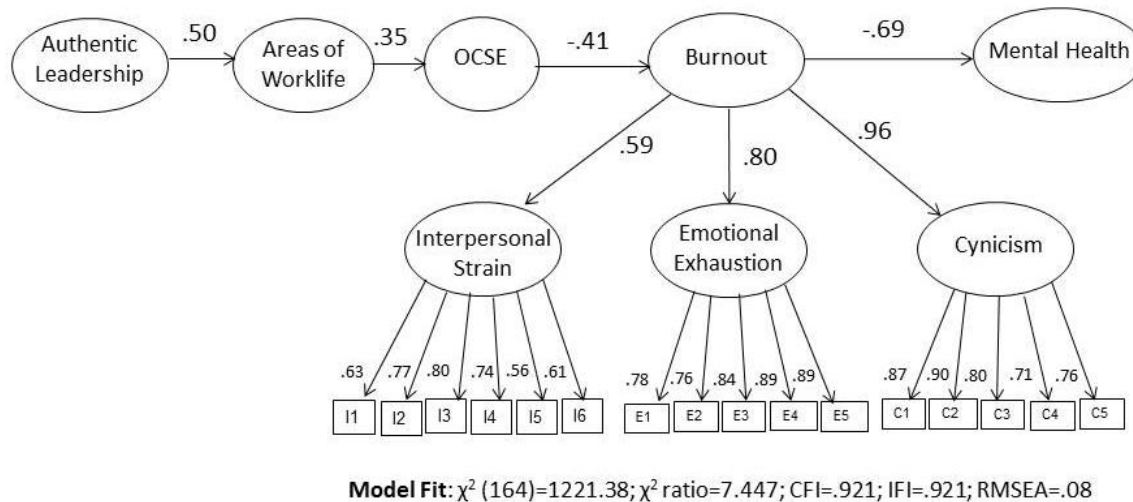


Table 3. Coefficient estimates for path model

Direct Effects	<i>Standardized Estimates</i>		
	β	CR	p
AL → AWL	.500	18.322	<.01
AWL → OCSE	.350	11.848	<.01
OCSE → Burnout	-.413	-12.575	<.01
Burnout → Mental Health	-.692	-23.486	<.01
Indirect Effects			
AL → AWL → OCSE	.175	-	<.01
AWL → OCSE → Burnout	.144	-	<.01
AL → AWL → OCSE → Burnout	-.072	-	<.01
AL → AWL → OCSE → Burnout → Mental Health	.050	-	<.01

Note: AL = authentic leadership; AWL = areas of worklife; OCSE = occupational coping self-efficacy

Discussion

Overall, the results supported the hypothesized model linking authentic leadership to new nurses' perceptions of person-job fit (areas of worklife) and OCSE, and subsequent burnout, and mental health. Furthermore, the results provide additional empirical support for Borgogni et al.'s (2012) expanded model of burnout which includes interpersonal strain at work in addition to the core dimensions of emotional exhaustion and cynicism.

Our findings add support to the growing body of literature suggesting that authentic leadership behaviours play a role in creating positive outcomes for new graduate nurses including lower levels of burnout (Laschinger & Fida, 2013, 2014; Laschinger et al., 2012) and better mental health (Laschinger & Fida, 2014). In our study, we found that authentic leadership influenced burnout and mental health indirectly through new nurses' perceived match with six areas of worklife and occupational coping self-efficacy, to our knowledge a previously unstudied leadership mechanism.

Our results suggest that use of authentic leadership behaviors by managers may positively influence new graduate nurses' occupational coping self-efficacy, both directly, and indirectly through areas of worklife match. In our study there was a significant direct relationship between

authentic leadership and areas of worklife, meaning that new graduate nurses who perceived their leader to be self-aware, transparent, ethical, and inclusive in their decision making processes also felt that their work expectations in terms of workload, control, rewards, a sense of community, and values congruence were met. Previous studies found that authentic leadership is related to areas of worklife match (Bamford, Wong, & Laschinger, 2013; Wong & Giallonardo, 2013) and our results provide further empirical support that authentic leaders may influence new graduate nurses' work experiences by providing them with a supportive, healthy work environment that helps build professional confidence in their nursing abilities and skills.

These findings are congruent with authentic leadership theory which highlights the role of leaders in providing employees with a supportive work environment that promotes work effectiveness (Gardner et al., 2005). By engaging in authentic leadership behaviours nurse managers may influence the six areas of worklife in Maslach and Leiter's (2003) model, resulting in a better fit between the reality of the workplace conditions and new graduate nurses' expectations. Authentic leaders create ethical, inclusive work environments and provide employees with support and opportunities for development (Gardner et al., 2005), characteristics reflected by Maslach and Leiter's (1997) areas of worklife. By building sincere, transparent relationships with followers and displaying integrity and congruence with internal moral values, nurse managers help create working conditions that promote new graduate nurses' autonomy and involvement with decisions (control), appropriate workload assignments, and provide them with resources and recognition (rewards). By developing positive leader-follower relationships, authentic leaders also foster a sense of community, fairness, and respect that align with new graduate nurses' values. In these ways, authentic leaders create positive working conditions that may influence new graduate nurses' perceptions of their work experience.

Importantly, new graduate nurses who reported high levels of areas of worklife match had greater levels of occupational coping self-efficacy. This is an important finding because new graduates' appraisals of being able to meet job demands is a key factor in their successful transition to the graduate role as they begin their professional careers and face new challenges. Our findings suggest that working conditions that provide areas of worklife match may play an influential role in helping new graduate nurses develop confidence in their ability to handle their new professional role and that authentic leaders play an important role in creating these conditions. This finding is consistent with authentic leadership theory which suggests that authentic leaders cultivate psychological capital in their followers by helping them to develop self-awareness and by fostering personal and professional growth (Avolio & Gardner, 2005). For example, by giving new graduate nurses reasonable workload assignments and support to make good clinical decisions and ask for help, nurse leaders can help reinforce new graduate nurses' confidence in their skills and abilities. By recognizing and rewarding new nurses for their progress and good work, nurse managers provide positive reinforcement that encourages them to believe in themselves and increases their job-specific self-efficacy. Authentic leaders may also have an indirect effect on occupational coping self-efficacy by facilitating a sense of community where all are welcome, treating everyone fairly, and reinforcing positive organization values. It makes sense that when new nurses feel a sense of belonging and fairness, and feel that their organization has values in line with their own, they will feel more confident in their ability to do a good job. These are some of the ways in which areas of worklife match may enhance new graduate nurses' occupational coping self-efficacy.

As Maslach and Leiter (1997) explain, areas of worklife match also plays a key role in preventing job burnout and the current findings suggest that occupational coping self-efficacy

may mediate this relationship. By creating a positive work environment that meets new graduate nurses' expectations, authentic leaders may help newcomers to the profession develop positive coping strategies for meeting the demands of the nursing role during the stressful transition period. The significant negative relationship between occupational coping self-efficacy and burnout may suggest that higher occupational coping self-efficacy may protect new nurses from developing early career burnout and thereby foster emotional well-being. This is important for the nursing profession given the well-established links between new nurse burnout and nurse retention outcomes, such as job dissatisfaction and career turnover intentions (Laschinger et al., 2013; Rudman & Gustavsson, 2011).

Our findings also provide support for Borgogni et al.'s (2012) expanded model of burnout. Our CFA results demonstrated the validity of a three-factor model of burnout that includes emotional exhaustion, cynicism, and interpersonal strain at work, supporting the inclusion of interpersonal strain at work as a valid burnout facet. Furthermore, the interpersonal strain at work factor structure was supported, consistent with Borgogni et al.'s (2012) results and adding further empirical support for this measure. The results demonstrated that interpersonal strain at work is a related but distinct facet of burnout (including cynicism) as argued by Borgogni et al. (2012). These findings provide evidence for the relevance of Borgogni et al.'s expanded model of burnout to the new graduate nurse population and provide a more comprehensive description of the nature of burnout in this population.

New graduate nurses in this study did not report high levels of interpersonal strain at work, which is consistent with Consiglio's (2014) and Borgogni et al.'s (2012) findings from studies of Italian healthcare workers. Nevertheless, in their studies interpersonal strain at work was significantly related to both the emotional exhaustion and cynicism components of burnout

and to poor physical health. Similarly, in our study interpersonal strain at work also was strongly related to both exhaustion and cynicism and to poor mental health. Furthermore interpersonal strain at work was significantly related to areas of worklife highlighting the importance of this facet of burnout and the need for nurse managers to ensure that new nurses' workplaces encourage positive interpersonal relationships among co-workers. Taken together, these studies linking interpersonal strain at work as a component of burnout to both poor mental and physical health provide evidence of the value of incorporating interpersonal strain at work into a more comprehensive conceptualization of burnout and point to additional interventions for nurse managers' efforts to create healthy work environments that retain nurses.

New nurses' ratings of emotional exhaustion were considerably higher than the cynicism and interpersonal strain at work dimensions. Consistent with burnout theory, Laschinger and Fida (2013) showed that burnout development among new graduate nurses may be a staged process, whereby prolonged feelings of emotional exhaustion lead to cynical attitudes about one's job and work role over time. This may also be the case for relational difficulties represented by interpersonal strain at work. In other words, sustained feelings of emotional exhaustion may cause novice nurses to feel that they no longer have the capacity to deal effectively with other people and their demands, resulting in feelings of interpersonal strain at work. Given that most of the nurses in our sample were in their first year of practice, it is possible that at the time of the survey they had not yet experienced the chronic effects of emotional exhaustion, that is, high levels of cynicism and interpersonal strain at work. However, new nurses' emotional exhaustion levels in this study were severe according to established norms (Schaufeli et al., 1996), suggesting that timely efforts to address this undesirable state of affairs are needed. Our results suggest that one burnout prevention strategy may be to build

occupational coping self-efficacy by engaging in authentic leadership behaviours that foster person-job fit.

Limitations

The primary limitation of this study is the cross-sectional nature of the study design which precludes strong statements of causality. A one-year follow-up data collection is planned which will allow us to determine the validity of our model over time. Common method variance is also a potential concern because data were collected using self-report measures from the same individuals at the same time. However, Spector (2006) argues that can be less of a problem when psychometrically sound measures are employed. Finally, the low response rate limits generalizability to some extent although the sample was sufficiently large to estimate stable effects and the sample demographics were similar to those of new graduate nurses in national databases (CIHI, 2013).

Conclusion

Burnout is an occupational hazard that has detrimental effects on the mental health of new graduate nurses and may threaten retention of this valuable health human resource (Laschinger & Fida, 2013; Laschinger et al., 2012). Our findings suggest that authentic leaders may play an important role in strengthening new nurses' confidence in their ability to cope with the demands of their jobs, thereby protecting them from burnout development and poor mental health. Our results suggest that leadership training to develop supervisors' authentic leadership skills may be a useful strategy for cultivating healthy work environments that promote occupational self-efficacy that may encourage retention of newcomers to the profession. This research adds to the growing body of work demonstrating the power of leadership in facilitating new graduate nurses' transition to the nursing profession.

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