New nurses burnout and workplace wellbeing: The influence of authentic leadership and psychological capital

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ABSTRACT

The detrimental effects of burnout on nurses' health and wellbeing are well documented and positive leadership has been shown to be an important organizational resource for discouraging the development of burnout. Intrapersonal resources also play a protective role against workplace stressors. This study investigated the influence of authentic leadership, an organizational resource, and psychological capital, an intrapersonal resource, on new graduate burnout, occupational satisfaction, and workplace mental health over the first year of employment ($n = 205$). Results supported the protective role of organizational and intrapersonal resources against burnout, job dissatisfaction, and mental health.

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1. Introduction

Nurses are the largest regulated healthcare provider group in Canada, representing almost one half of all healthcare workers (Canadian Institute of Health Information, 2005). But with an aging workforce, attention to creating work environments that retain newcomers to the profession is important for sustaining the future nursing workforce. Workplace conditions that empower employees to optimize work performance are known to enhance employee well-being and retention (Kanter, 1977). Yet recent studies have shown that new graduate nurses are reporting high levels of burnout (Cho, Laschinger, & Wong, 2006) and job turnover (Beecroft, Kunzman, & Krozek, 2001; Bowles & Candela, 2005; Brewer, Kovner, Greene, Tukov-Shuser, & Djukic, 2011). Given the well documented detrimental effects of burnout on employee health and workplace wellbeing, it is important to examine organizational and personal resources that protect new graduate nurses from burnout and the negative health and organizational effects of this persistent phenomenon in health care settings.

Positive leadership approaches that support employees' relationships with their work is an example of an important organizational resource that has been shown to discourage the development of burnout (Melchior, Bours, Schmitz, & Wittich, 1997; Zopiatis & Constanti, 2010). On the other hand, recent work

has shown that intrapersonal resources, such as psychological capital, also play a protective role against workplace stressors (Luthans & Jensen, 2005). Studies investigating the combined effects of personal and organizational resources on new graduate burnout are rare and the few that have are cross-sectional. Therefore the purpose of this study was to investigate the influence of authentic leadership, an organizational resource, and psychological capital, an intrapersonal resource, on new graduate burnout development, occupational satisfaction, and workplace mental health over the first year of their practice.

1.1. Burnout in the health care professions

Burnout is a well-documented psychological response to chronic job stressors (Maslach, 2004). Burnout consists of three components-emotional exhaustion, cynicism and personal efficacy – however; emotional exhaustion (EE) and cynicism (CYN) are considered the core elements of burnout (Leiter, Harvie, & Frizzell, 1998; Leiter & Maslach, 2004; Maslach & Leiter, 1997). Similar to other helping professions, the prevalence of burnout in nursing is particularly high, because of the high emotional and physical demands of this work (Greenglass, Burke, & Fiksenbaum, 2001; Leiter & Maslach, 1988). High burnout levels in nursing have been associated with heavy workloads (Greenglass et al., 2001; Laschinger, Finegan, & Wilk, 2011), inadequate staffing levels (Aiken & Salmon, 1994; Garrett & McDaniel, 2001), job dissatisfaction (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Vahey, Aiken, Sloane, Clarke, & Vargas, 2004; Zangaro & Soeken, 2007),
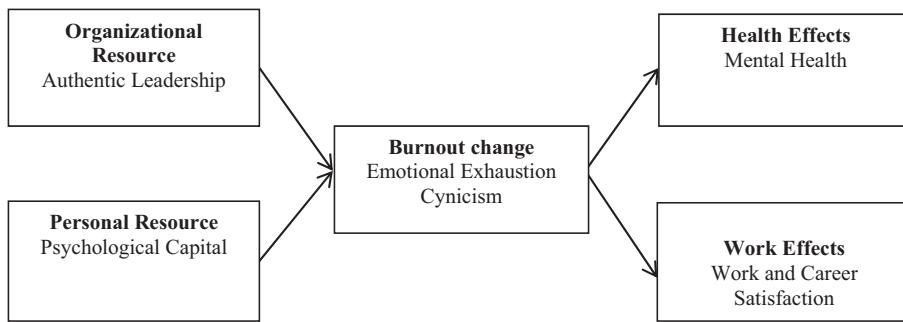
Fig. 1. Posited model.

absenteeism (Michie & Williams, 2003), and turnover (Fochsen, Sjögren, Josephson, & Lagerström, 2005; Kovner et al., 2007; Leiter & Maslach, 2009). In medicine, burnout has been linked to career dissatisfaction (Shanafelt et al., 2009) and career turnover (Becker, Milad, & Klock, 2006). Schaufeli and Buunk (Schaufeli & Buunk, 2003) note that the relationship between burnout and turnover is often weak, suggesting that many burned out employees remain in their jobs often with negative consequences for both themselves and their organizations. Supportive management has however been linked to lower levels of emotional exhaustion in health care work environments (Balogun, Titiloye, Balogun, Oyeyemi, & Katz, 2002). Vahey et al. (Vahey et al., 2004) suggest that positive leadership behaviors may protect employees against burnout.

Recent research on burnout among new graduate nurses is troubling. Cho et al.'s (Cho et al., 2006) study found that 66% of new graduates experienced severe burnout, primarily related to negative workplace conditions. Laschinger et al. (Laschinger, Grau, Finegan, & Wilk, 2010) found similar results, suggesting that new graduate burnout continues to be a problem. New graduate burnout has been significantly related to lack of supervisor support (Spooner-Lane & Patton, 2007), unmanageable workloads (Laschinger, Wong, & Grau, 2012a), absenteeism and turnover intentions (Beecroft, Dorey, & Wenten, 2008; Rudman & Gustavsson, 2011), lower organizational commitment (Cho et al., 2006) and depression (Rudman & Gustavsson, 2011; Pineau Stam, Laschinger, Regan, & Wong, 2013). Spooner-Lane and Patton (Spooner-Lane & Patton, 2007) found that new graduate nurses in Australia were at higher risk for burnout and that supervisor support was a significant predictor of low levels of emotional exhaustion.

These studies demonstrate the detrimental effects of burnout in the nursing profession in general and for new graduate nurses in particular. These findings are alarming and suggest that every effort should be made to prevent new graduate nurse burnout not only to protect their own health, but also that of their organizations. Given the critical role new nursing graduates play in sustaining the future nursing workforce, understanding the personal and organizational factors that may protect new graduate nurses from burnout is important.

1.2. Theoretical model of the study

In our study, we propose that both organizational and personal resources play an important role in protecting new graduate nurses from burnout development and its detrimental health and job-related effects. We consider leadership, particularly authentic leadership (Avolio & Gardner, 2005), to be an important organizational resource that reduces the likelihood of burnout in nursing work environments. In addition, psychological capital is a personal resource that enables individuals to respond positively to challenges they encounter at work (Luthans & Jensen, 2005). These

two theoretical constructs and their relationship to burnout and subsequent job related health effects are described in the upcoming section. The relationships among constructs in our model are illustrated in Fig. 1.

1.2.1. Influence of Leadership on work environments

Leaders play a key role in creating work environments that optimize employee performance and workplace well-being (Kane-Urrabazo, 2006; Kuoppala, Lamminpää, Liira, & Vainio, 2008). Leaders shape the quality of the immediate work environment which has an important impact on employees' experiences with their work and subsequent job and health-related outcomes (Leiter & Maslach, 2004; Wong, Laschinger, & Cummings, 2010). When leaders fail to ensure that working conditions support employees' ability to accomplish their work in meaningful ways, employees struggle to achieve work goals and may become exhausted, hindering performance, and ultimately diminishing their health and well-being (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; Kelloway & Day, 2005; Stouten et al., 2010). Research has shown that relationally focused leadership styles are more effective than autocratic leadership approaches (Kuoppala et al., 2008; Wendt, Euwema, & Van Emmerik, 2009).

Authentic leadership is an emerging model of leadership originating in the field of Positive Organizational Psychology that has shown promising results in creating positive work environments that foster employee health and wellbeing (Avolio & Gardner, 2005). Previous research has linked positive leadership practices in general (Laschinger et al., 2011; Duffield, Gardner, & Catling-Paull, 2008; Hauge et al., 2011) and authentic leadership in particular, to positive work outcomes (Wong et al., 2010; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008; Giallonardo, Wong, & Iwasiw, 2010), suggesting that leadership is a key organizational strategy for promoting recruitment and retention of new graduate nurses (Jensen & Luthans, 2006).

1.2.2. Authentic Leadership

Authentic leadership is a positive relationship-focused leadership style that emphasizes self-awareness, honesty and transparency, behavioral integrity, and consistency (Avolio, Gardner, Walumbwa, Luthans, & May, 2004). Authentic leadership is posited to influence performance by emphasizing people's strengths rather than weaknesses (Avolio & Gardner, 2005; Wong & Cummings, 2009). Authentic leadership is "a pattern of transparent and ethical leader behavior that encourages openness in sharing information needed to make decisions while accepting input from those who follow" (Avolio, Walumbwa, & Weber, 2009)[51, p. 424]. Authentic leaders build trusting work environments that engage followers through four types of behaviors: *Balanced processing, relational transparency, internalized moral perspective*, and *self-awareness* (Walumbwa et al., 2008). *Balanced processing* refers to behaviors of leaders who try to gather and analyze all relevant data and

viewpoints, both positive and negative, before making important decisions. *Relational transparency* involves being open with others, sharing thoughts and feelings and encouraging others to share their ideas, challenges and opinions. *Internalized moral perspective* refers to self-regulation that is guided by internal moral standards and values resulting in behaviors and decisions consistent with those values. Finally, authentic leaders show *self-awareness* by acknowledging their own strengths and weaknesses and understanding how they affect others. Authentic leadership behavior promotes positive relationships between leaders and employees which results in higher employee engagement and work satisfaction (Giallonardo et al., 2010). Authentic leadership has been linked to greater trust in management, empowerment, work engagement, and higher ratings of patient care quality in nursing settings (Wong et al., 2010; Giallonardo et al., 2010). In the management literature, authentic leadership is a significant predictor of job satisfaction and organizational commitment (Walumbwa et al., 2008).

Authentic leadership has been linked to burnout in the general management literature and to a lesser extent in the nursing literature. Laschinger et al. (Laschinger et al., 2012a) found that nurses' perceptions of their immediate supervisors' authentic leadership was indirectly and negatively associated with burnout through higher levels of empowerment. On the other hand, in a cross sectional study of newly graduate nurses, Laschinger et al. (Laschinger, Wong, & Grau, 2012b) found that the influence of authentic leadership on new graduate nurse burnout was mediated by higher levels of empowerment and lower levels of bullying in the workplace. That is, authentic leadership appeared to play a protective role against burnout by ensuring empowering conditions were in place and by creating environments that discouraged bullying. Spooner-Lane and Patton (Spooner-Lane & Patton, 2007) found that support from supervisors was an especially important predictor of lower levels of emotional exhaustion in new nurses, a finding corroborated by Vahey et al. (Vahey et al., 2004) in their study of US nurses. Authentic leaders are more likely to be in tune with the needs of their followers and to ensure that necessary resources are in place to achieve work goals with a reasonable amount of effort. By ensuring that nurses have sufficient resources to accomplish their work, emotional exhaustion and its inevitable outcome if prolonged, cynicism, are less likely. Therefore we hypothesize that:

Hypothesis 1. New graduates' perceptions of their immediate supervisors' authentic leadership behavior is negatively related to their likelihood of developing burnout (EE and CYN) in the first year of employment. Specifically the more nurses perceive their supervisor as authentic the less likely they are to experience emotional exhaustion and cynicism in the first year of practice and consequently the less likely they are to experience an increase in burnout over a 1 year timeframe.

1.2.3. Influence of psychological capital (PsyCap) on burnout

PsyCap is another construct emerging from positive organizational psychology research (POP), defined as the study of "positive human strengths and psychological capacities" that are measureable, that can be "developed, and managed" for improved employee performance in the workplace (Luthans & Church, 2002)[53, p. 59]. According to Luthans and Church (Luthans & Church, 2002), POP constructs involve state-like characteristics as opposed to trait-like characteristics. State-like characteristics are human emotions and moods that are malleable and susceptible to change based on context or situation whereas trait-like characteristics are more static and difficult to change (Luthans & Church, 2002). Workplace interventions designed to develop or strengthen PsyCap are likely to be more effective because changing states requires less time and effort than changing traits (Luthans & Church, 2002).

PsyCap consists of four dimensions that reinforce each other, all of which can be enhanced and managed for employee and organizational success (Luthans et al., 2007a; Luthans, Avolio, Avey, & Norman, 2007b). *Self-efficacy is* derived from Bandura's (Bandura, 1997) seminal work and refers to a person's self-confidence in his or her ability to act and perform tasks. PsyCap self-efficacy involves five behaviors: high goal setting, openness to challenging tasks, high self-motivation, application of the necessary effort for goal accomplishment, and perseverance through adversity (Luthans et al., 2007a; Luthans et al., 2007b). *Hope* is based on Snyder et al's (Snyder et al., 1996) work describing a person's motivation to reach goals (Luthans et al., 2007a; Luthans et al., 2007b). Hope entails the self-motivation to get to where one wants to be and to create realistic paths to achieve those goals, even when faced with obstacles (Luthans & Youssef, 2004). *Optimism* is the perception that negative situations are caused by external, momentary and situational sources, whereas positive situations are the result of internal, lasting causes (Luthans & Youssef, 2004). Optimistic people will credit themselves for positive life events, elevating self-esteem, and distancing themselves from the negativity of unfavorable situations, thereby protecting themselves from depression, self-blame and despair (Luthans & Youssef, 2004). Finally, *resiliency* involves the ability to recover from "adversity, uncertainty, failure or overwhelming changes" (Luthans & Youssef, 2004)[58, p. 154]. Resilient people have the flexibility to move beyond setbacks, and perform at higher levels having responding effectively to challenges (Luthans & Youssef, 2004). Resiliency allows for the acceptance of reality, development of strong beliefs, perception of life as meaningful, and the development of flexibility for adaptation to significant change (Luthans & Youssef, 2004).

The protective role of PsyCap against work stressors has been suggested although not extensively examined, particularly in the nursing population. Avey et al. (Avey, Luthans, & Jensen, 2009) found that employees with higher PsyCap experienced lower stress and were less likely to leave their jobs. Roberts et al. (Roberts, Scherer, & Bowyer, 2011) study found that PsyCap moderated the impact of stress on employees' tendency to respond with uncivil behaviors, such that high PsyCap employees were less likely to be uncivil to their coworkers. Luthans and Jensen (Luthans & Jensen, 2005) was the first to link PsyCap to burnout and job dissatisfaction of nurses suggesting that PsyCap may mitigate the effects of negative work experiences on nurses' relationships with their work.

Based on PsyCap theory and previous research it is reasonable to expect that individuals who possess a high degree of confidence in themselves as well as high levels of hope, optimism about achieving work-related goals, and are resilient to workplace challenges (PsyCap), will be less likely to develop burnout over the first year of their practice. Therefore we hypothesized that:

Hypothesis 2. New graduate nurse PsyCap will decrease the likelihood of developing burnout (EE & CYN) in the first year of employment. Higher levels of PsyCap are related to lower initial levels of new graduate nurse burnout (both EE and CYN) and consequently to lower increases in burnout over the first year of practice.

1.2.4. Influence of burnout on nurses workplace mental health

Burnout has been linked to poor mental health, such as depression and anxiety in numerous studies in the general management and nursing literature. Peterson et al. (Peterson et al., 2008) found that nurses who reported higher levels of burnout also reported suffering from depression, anxiety, sleep disturbances and significant memory impairment. Abdi et al. (Abdi, Kaviani Hossein, & Momeni Araghi, 2007) also linked nurse burnout to poor mental health and found that nurses exhibited significantly more mental health symptoms in comparison to general population rates. Burnout has been

Table 1
Descriptive statistics and correlations among study variables.

	M	SD	Skeweness	Kurtosis	Alpha	1.	1a	1b	1c	1d	2.	2a	2b	2c	2d	3.	4.	5.	6.	7.
1. AL T1	2.49	.88	−.45	−.51	.94	–														
1a TRANS	2.61	.86	−.44	−.32	.83	**.89**	–													
1b MORAL	2.58	.93	−.49	−.26	.87	**.89**	**.76**	–												
1c BALANCE	2.50	1.02	−.49	−.39	.80	**.91**	**.73**	**.78**	–											
1d SLFAWRE	2.30	1.15	−.36	−.89	.93	**.90**	**.70**	**.70**	**.80**	–										
2. PSYCAP	5.12	.75	−.35	.83	.90	**.24**	**.20**	**.23**	**.23**	**.20**	–									
2a PCEFF	4.5	1.18	−.21	−.29	.89	**.21**	**.15**	**.20**	**.22**	**.19**	**.77**	–								
2b PCHOPE	5.30	.90	−.85	1.69	.85	**.20**	**.19**	**.18**	**.21**	.14	**.85**	**.50**	–							
2c PCRES	5.22	.85	−.42	.03	.74	.09	.11	.09	.07	.04	**.76**	**.39**	**.56**	–						
2d PCOPT	5.07	.86	−.43	–	.72	**.22**	**.17**	**.23**	**.17**	**.22**	**.67**	**.27**	**.54**	**.42**	–					
3. Exh T1	2.75	1.56	.47	−.78	.92	−**.17**	−.07	−.14	−**.21**	−**.20**	−**.30**	−.11	−**.31**	−**.19**	−**.30**	–				
4. Cyn T1	1.64	1.33	.74	−.11	.84	−**.25**	−**.23**	−**.23**	−**.25**	−**.19**	−**.29**	−.04	−**.33**	−**.15**	−**.39**	**.55**	–			
5. Exh T2	2.90	1.53	.31	−.78	.84	−**.22**	−.14	−**.20**	−**.23**	−**.25**	−**.19**	−.10	−**.16**	−.12	−.13	**.55**	**.31**	–		
6. Cyn T2	1.91	1.42	.64	−.46	.93	−**.22**	−**.16**	−**.19**	−**.23**	−**.22**	−**.21**	−.10	−**.22**	−.09	−**.19**	**.46**	**.50**	**.58**	–	
7. MH T2	2.42	1.01	1.22	.98	.85	−.12	−.06	−.10	−.14	−.12	−**.30**	−.13	−**.28**	−**.25**	−**.24**	**.32**	**.24**	**.37**	**.37**	–
8. W-SAT T2	3.57	.86	−.49	−.32	.82	**.32**	**.19**	**.28**	**.33**	**.35**	**.19**	.13	**.21**	.02	**.18**	−**.37**	−**.29**	−**.55**	−**.59**	−**.29**

Note in bold the correlations statistically significant for p < .05.

linked to poor mental health in other professions, such as medicine (Tokuda et al., 2009).

Research has shown that new graduate nurses report high levels of burnout (Cho et al., 2006) and job related stress (Boychuk-Duchscher & Cowin, 2004). Lavoie-Tremblay et al. (Lavoie-Tremblay, O'Brien-Pallas, Gélinas, Desforges, & Marchionni, 2008) found that new graduate nurses experiencing high levels of psychological distress also experienced job strain resulting from workload demands and a lack of social support from peers and supervisors. Higher levels of burnout were associated with lower levels of positive emotions and greater emotional labor in Erickson and Grove's (Erickson & Grove, 2008) study of experienced and newly graduated nurses. However, these effects were stronger among new graduates.

Based on burnout theory and research linking burnout to poor workplace mental health, we expected that new graduate nurses suffering from feelings of exhaustion and cynicism initially and who experience increases in these two burnout dimensions during the first year of practice in response to stressful non-supportive work environments would be more likely to experience depressive symptomology (poor mental health). We therefore hypothesized that: Hypothesis 3: Higher initial levels of burnout and subsequent increases over the first year of practice (both EE and CYN) will be related to poorer mental health.

1.2.5. Influence of burnout on job satisfaction

Burnout is often cited as a source of job dissatisfaction (Aiken et al., 2002; Shanafelt et al., 2009; Laschinger et al., 2012b). In general work settings, emotional exhaustion (sometimes deemed work exhaustion) and burnout have been linked to reduced job satisfaction (Burke & Greenglass, 1995; Moore, 2000a) as well as to both actual and job turnover intentions (Moore, 2000b; Thomas & Williams, 1995). In healthcare settings, burnout is also a strong predictor of both job and career satisfaction. Laschinger et al. (Laschinger, Leiter, Day, & Gilin, 2009) found that burnout was a significant predictor of Canadian nurses' job satisfaction, a finding corroborated by Piko (Piko, 2006) in a study of Hungarian healthcare staff. Job turnover intentions, largely the result of job dissatisfaction, are alarmingly high for nurses in the first years of practice, ranging from 35 to 62%.

It is evident that burnout contributes to lowered job satisfaction, which may then have an impact on subsequent employee turnover intentions, further highlighting the importance of maintaining a satisfied and healthy workforce. However, when workplace conditions result in feelings of emotional exhaustion and cynicism, new graduates are less likely to be satisfied with their jobs and possibly

their career. Specifically we expected that new graduate nurses suffering from feelings of exhaustion and cynicism initially and those who experience increases in these two burnout dimensions during the first year of practice would be less likely to be satisfied with their jobs. We therefore we hypothesized that:

Hypothesis 4. Higher initial levels of burnout and subsequent increases over the first year of practice (both EE and CYN) will be related to lower work satisfaction.

2. Methods

2.1. Participants and procedures

We used data from a two-wave survey of newly graduated nurses with less than two years of experience in acute care hospitals across Ontario (T1 in 2010; T2 in 2011). The original sample was drawn from the registry list of practicing nurses in Ontario (N = 907). Participants received a questionnaire package at their home address using Dillman's (Dillman, 2007) methodology to improve participants' mailed survey response rates. Questionnaires were coded to match responses at T1 and T2. At T1, 342 participants returned the questionnaire (response rate of 37.7%). Follow-up questionnaires at T2 were sent only to T1 respondents, with a total of 205 returning completed questionnaires (response rate of 59.9%). Approval from the university ethics review board was obtained prior to the survey.

The demographic profile for both samples is presented in Table 1. The majority of nurses were female (92%), averaging 28 years of age and 1.04 years nursing experience. All were baccalaureate prepared. Most worked on either medical-surgical units (55%) or critical care units (23%) on a full-time basis (62%) and part-time basis (28%). There were no noteworthy T1–T2 differences between sample characteristics. This demographic profile is similar to provincial statistics for nurses within 5 years graduation (Canadian Institute of Health Information, 2009).

2.2. Measures

We used standardized questionnaires to measure the major study variables. All measures had acceptable Cronbach alpha reliability (see Table 2).

The Authentic Leadership Questionnaire (ALQ) (Avolio, Gardner, & Walumbwa, 2007) was used to measure nurses' perceptions of their immediate supervisors' use of each of the 4 types of AL behaviors: (1) relational transparency, e.g., "my leader says exactly what he or she means"; (2) moral/ethical, e.g., "my leader makes decisions

Table 2
Indirect estimates and bootstrap confidence interval of the indirect effects from AL and PsyCap at Time 1 to both mental health and work satisfaction at Time 2.

Indirect effect	Estimate	CI
AL T1 → IEE → MH T2	−**.10**	−.177 to -.026
PsyCap T1 → IEE → MH	−**.14**	−.246 to - .043
AL T1 → IEE → SEE → W-SAT T2	.04	−.025 to .100
AL T1 → IEE → SC → W-SAT T2	**.08**	.026 to .140
PsyCap T1 → IEE → SEE → W-SAT T2	.05	−.021 to .127
AL T1 → IEE → SEE → W-SAT T2	**.09**	.023 to .164

Note. In bold the significant estimates. CI = 95% bootstrap confidence interval.

based on his or her core values"; (3) balanced processing, e.g., "my leader listens carefully to different points of view before coming to a decision" and; (4) self-awareness, e.g., "my leader shows he or she understands how specific actions impact others". The manager was defined as the formal leader of the clinical unit where they worked the majority of their time. Sixteen items (4 items per subscale) were rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (frequently, if not always).

Psychological Capital (PsyCap) was measured by the Psychological Capital Questionnaire (Luthans et al., 2007a; Luthans et al., 2007b) which taps each of the four dimensions of this construct. Each subscale consists of 6 items rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). This measure has previously demonstrated acceptable internal consistency (Cronbach's α = .66–.89) and discriminant validity.

The Emotional Exhaustion (EE) and Cynicism (CYN) subscales of the Maslach Burnout Inventory-General Survey (MBI-GS) (e.g., "I feel emotionally drained from my work" and "I doubt the significance of my work", respectively) were used to measure new graduate burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). Each subscale contains five items rated on a 7-point Likert scale ranging from 0 (never) to 6 (daily).

Work satisfaction was measured using four items adapted from Shaver and Lacey (Shaver & Lacey, 2003) rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) with higher scores representing greater job satisfaction. Participants were asked to respond to statements such as "I am happy with my current work environment" and "I would encourage other nurses to apply for a job here". In the present study, Cronbach's alphas were .83 and .82 for Time 1 and Time 2, respectively.

Mental Health was measured using by the 5-item Mental Health Index (MHI-5) of the SF-36 (Ware & Sherbourne, 1992) which measures depressive symptomatology. The MHI-5 correlates highly with the GHQ-12, a well-established indicator of mental health, providing evidence of concurrent validity (Cronbach alpha estimates have ranged from .65 to .80.

2.3. Statistical procedures

In a preliminary analysis descriptive statistics for all study variables were examined, as well as reliability assessments. Specific means, standard deviations, kurtosis and skewness and correlations were examined and then Cronbach's alphas were analyzed as indices of the internal consistency (see Table 1).

We used a conditional latent growth model (LGM) with two time points (Duncan, Duncan, & Strycker, 2011) to investigate the stability and change of both EE and CYN and the extent to which AL and PsyCap at time 1 influenced initial levels of these burnout dimensions and changes over a one year time frame of both burnout dimensions and the extent to which both initial levels and changes in EE and CYN predicted mental health and work satisfaction at Time 2 (see Fig. 2). Two latent variables for each burnout dimension were specified from two indicators, that is, the two repeated measures (Time 1 and Time 2) of EE and CYN. The first factor is the intercept representing the starting point or initial levels of EE and CYN. The second factor is the slope that reflect the growth rates of EE and CYN (burnout development). Both intercept and slope have
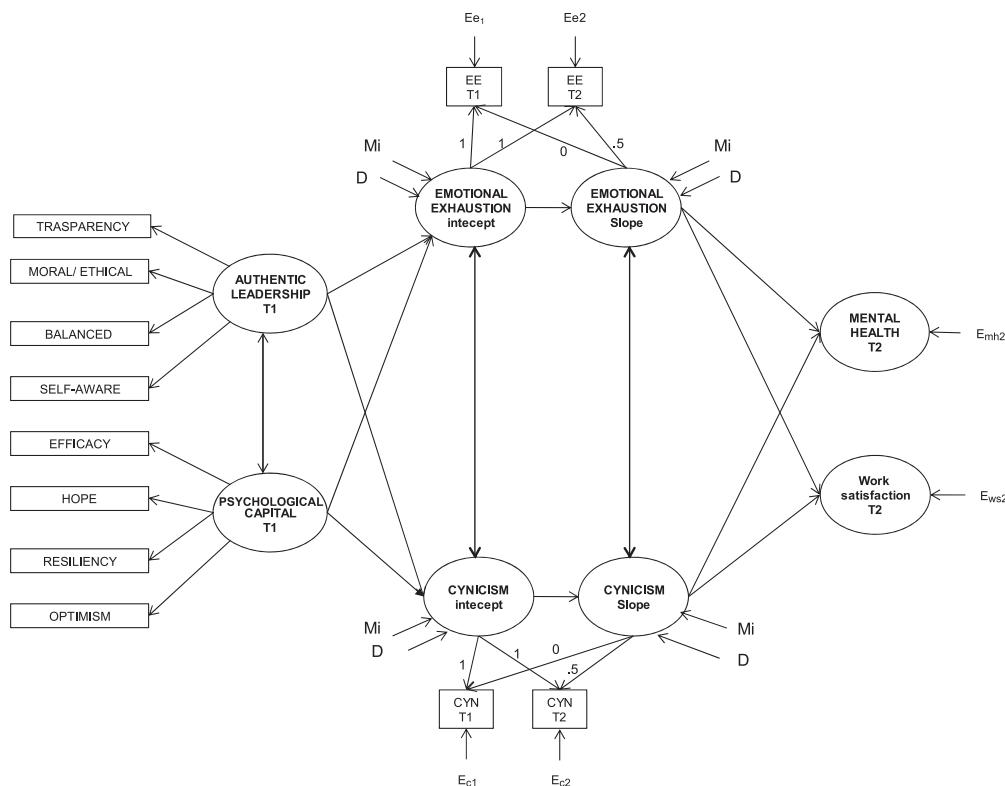

Fig. 2. Statistical representation of the model examined.

two parameters: mean (Mi) and variance (D). Since in the LGM with only two time points there are not enough degrees of freedom, we fixed the error variance of the repeated measures of EE and CYN at one minus the sample reliability estimate of the variable, multiplied by its sample variance as suggested by Duncan et al. (Duncan et al., 2011).

In line with previous studies, AL and PsyCap were defined as two second order latent factors: one defined by using the four AL dimensions (Walumbwa et al., 2008) and the other one defined by using the four PSYCAP dimensions (Luthans et al., 2007a; Luthans et al., 2007b). Finally mental health and work satisfaction were posited as single-indicator latent variables. We used this method to account for measurement error and obtain more precise estimates of structural parameters. Following Bollen (Bollen, 1989), error variance for each indicator was fixed at one minus the sample reliability estimate of the variable, multiplied by its sample variance.

Finally in order to examine the indirect effects of both Psy-Cap and AL on both mental health and work satisfaction through both EE and CYN growth curves we used the bootstrap procedures described by MacKinnon and colleagues (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) implemented in Mplus. This approach calculates the critical values for the upper and lower confidence limits for indirect effects using the bias-corrected bootstrap method with 1000 bootstrap runs. This method offers the best power, confidence intervals placement, and overall Type I error, also with complex models in which more than one mediators are implied (Taylor, MacKinnon, & Tein, 2008; Williams & MacKinnon, 2008). As suggested by for example Bollen and Curran (2006), before expanding the LGM by including the two predictors of growth factors and the outcomes, we first tested the LGM of both burnout dimensions in order to examine how these two dimensions change in the one year time frame. We then we included the AL and PsyCap as predictors to examine whether and how these dimensions influenced the burnout growth factors that in turn influenced both mental health and work satisfaction.

Since there was non-normality of mental health variable, we used the M*plus* robust ML method for parameters estimation, to correct standard errors and the chi-square test statistic for non-normality. Chi-square (χ^2) and incremental fit indices such as the Comparative Fit Index (CFI) (Bentler & Bonett, 1980), the root mean square error of approximation (RMSEA; (Steiger, 1990)) and standardized root mean square residual (SRMR; (Jöreskog & Sörbom, 1984)) were considered as fit indices in accordance with a multifaceted approach of the model fit (Tanaka, 1993). These analyses were performed using the Statistical Package for the Social Sciences (SPSS) (version 16.0) and *MPlus* (version 7.1, Muthén & Muthén, 1998–2010)

3. Results

3.1. Descriptive statistics

Descriptive statistics of the study variables and their intercorrelations are shown in Table 1. PsyCap and burnout were correlated with all study variables, as was AL with the exception of mental health at T2.

3.2. Structural equation model

As a first step we examined the LGM of burnout dimensions without including any predictors or outcomes. Results of this model suggested that both EE and CYN increased over the one-year time frame (Mean slopes 2.312 and 1.165, $p = .000$ for EE and CYN, respectively). Moreover this model suggested that the intercept and slope of both EE and CYN are negatively associated, that is the lower the

starting point the greater the change over time (betas −.20 and −.44 for EE and CYN, respectively). In the second step we added both AL and PsyCap at Time 1 as predictors of initial levels of burnout (Time 1 EE and CYN) and both mental health and work satisfaction at Time 2 as outcomes. Results of this model ($\chi^2(68) = 133.30$, $p < .01$; CFI = 94; RMSEA = .070 (CI = .052–.087), $p = .04$; SRMR = .061) are shown in Fig. 3. Results of this model suggested that both AL and PsyCap negatively influenced both burnout dimensions intercepts. In other words the more new graduated nurses perceive their leader to be authentic the less they experience feelings of EE and CYN. Similarly, the more new graduate nurses are confident in themselves, the less they experienced feelings of burnout.

Moreover both EE and CYN slopes affected work satisfaction but not mental health. That is, the more new graduate nurses experienced increasing levels of burnout over time the less they were satisfied of their job. On the other hand, mental health symptoms were predicted only by initial levels of EE (intercept) and psychological capital. Specifically the more new graduate nurses are confident in themselves and the lower their level of EE at time 1, the less they are to experience mental health issues at time 2. In addition, both AL and PsyCap indirectly influenced both mental health problems and work satisfaction through the two burnout dimensions growth factors (see results of the indirect effects shown in Table 2). That is, AL and PsyCap decreased the likelihood of mental health problems through their influence on initial levels of EE (intercept), but they increased the likelihood to be satisfied with their jobs through their influence on initial level of cynicism and change.

4. Discussion

The results of this study supported a model that suggests that both personal and organizational resources may play a role in protecting new graduate nurses from burnout development and its negative health and work related outcomes. Both AL and PsyCap were associated with lower initial levels of burnout and subsequent change over the 1-year timeframe, which in turn, were associated with health and job-related outcomes. These findings suggest that both work-directed interventions, such as building authentic leadership skills and person-oriented interventions, such as building Psycap skills, may be helpful in preventing early career burnout and subsequent personal and job-related outcomes. Both Westermann et al. (Westermann, Kozak, Harling, & Nienhaus, 2014) and Awa et al. (Awa, Plaumann, & Walter, 2010) found that work-directed burnout interventions tended to have longer term effects (up to 1 year) than person-oriented burnout interventions (up to 1 month) in long term care nursing settings. This makes sense because organizational factors may be more amenable to change than intrapersonal characteristics, although both reviews found evidence that a combination of personal and organizational intervention strategies were effective as well. Two recent intervention studies found that providing training in coping skills resulted in lower burnout (Salyers et al., 2011). Strengthening coping skills is consistent with developing the self-efficacy component of psychological capital. Morse et al. (Morse, Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012; Morse et al., 2012) noted that reports of well controlled organizational burnout interventions are scarce, probably in part due to logistic difficulties in implementing these complex interventions within complex organizational structures. Nevertheless, these authors recommend further efforts to design effective interventions and to ensure that more distal outcomes beyond changes in burnout levels, such as employee stress and health and job related outcomes such as job satisfaction and turnover, be included to provide a more comprehensive evaluation of the intervention effects.
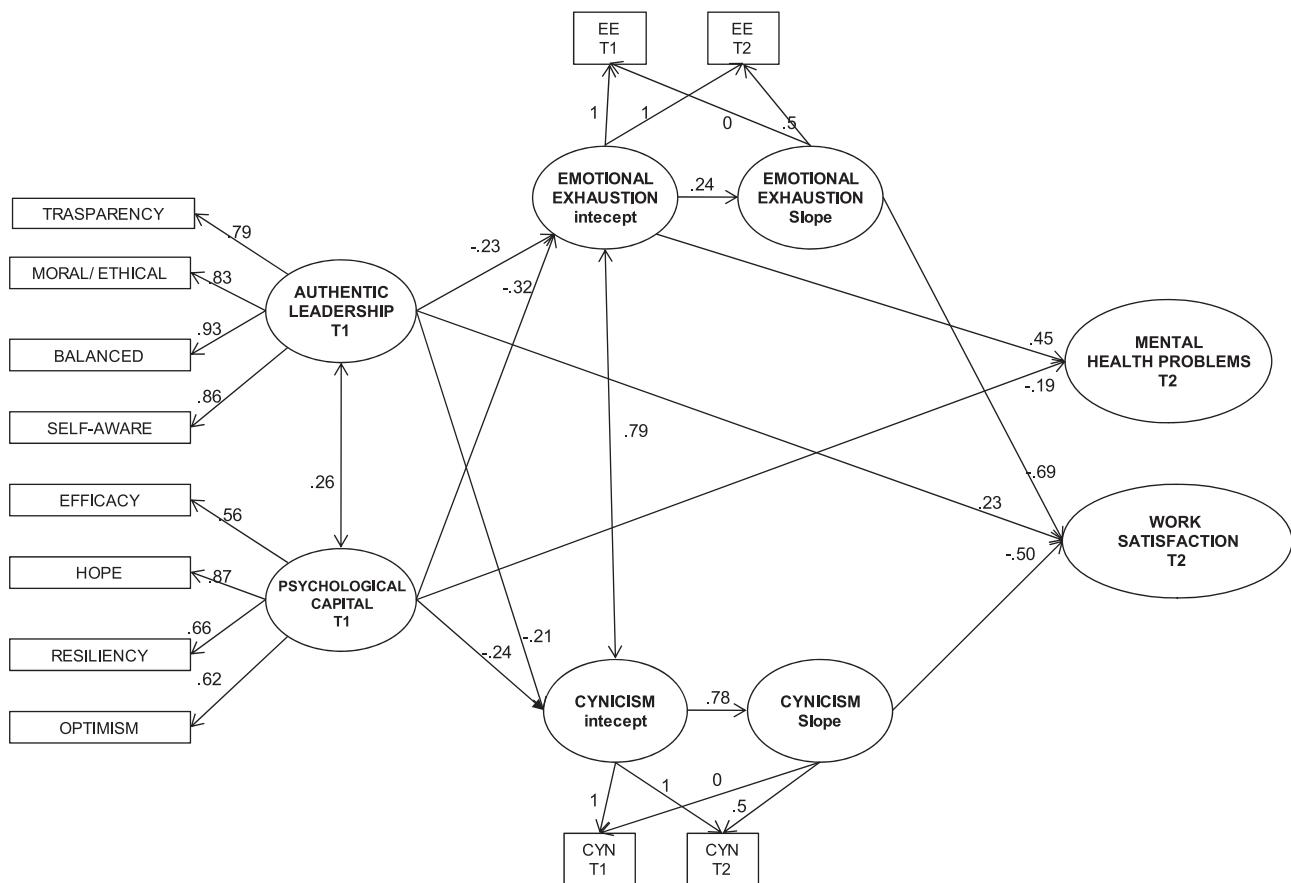
Fig. 3. Final Model.

This study is one of the first to empirically link authentic leadership to new graduate nurses' experiences of burnout in the workplace over time. This is an optimistic finding because according to Eigel and Kuhnert (Eigel & Kuhnert, 2005) it is possible to develop authentic leadership behaviors which can be used to prevent burnout through creating supportive work environments that are sensitive to the needs of employees. Eigel and Kuhnert (Eigel & Kuhnert, 2005) developed a Leadership Development Levels (LDL) framework, which describes how moral and mental capacities of leaders evolve to acquire an authentic leadership style. To be an authentic leader, individuals must have a stable sense of self-knowledge and actively identify with their leadership roles. However, their workplace culture must be supportive of their need to regulate their behavior in order to enact the type leadership that is aligned with their personal values.

Avolio and Wernsing (Avolio & Wernsing, 2008) describe a variety of approaches for developing AL behaviors, the core of which center around having individuals systematically reflect upon their experiences that are characteristic of AL in their day to day work. According to Avolio and Wernsing (Avolio & Wernsing, 2008), individuals can develop AL behaviors by reflecting on these 'trigger moments' (p. 155) which may stimulate them to learn from these events and ultimately enhance their leadership potential. In more formalized approaches to leadership development, the focus is on beginning with existing strengths in AL behaviors and use these to leverage less developed AL behaviors through structured 'micro-interventions'. These micro-interventions might include learning materials such as case studies or stories that trigger leadership actions that result in further development of the AL behavior. An important part of these micro-interventions include 'booster events' that are designed to reinforce behaviors elicited by

trigger events. Both micro-interventions and boosters may occur in face-to-face learning sessions or through online technologies (e.g., web-based programs or smartphone reminder messages). Thus, the emphasis of AL leadership development is at the individual level on an ongoing basis as situations arise within the job context rather than formalized offsite leadership development workshops commonly used in healthcare (Cummings et al., 2008). According to Avolio and Wernsing (Avolio & Wernsing, 2008), AL development is best accomplished by embedding the process within the employee's organizational context rather than outsourcing the process to external experts. By doing so, leaders have better opportunities to reflect on their real life learning and thereby build AL knowledge, skills and behaviors in their day to day practice. Our results revealed that AL behaviors are associated with lower burnout and suggest that greater use of these behaviors by management may create work environments that protect new nurses from burnout. Thus, AL training programs seem warranted.

As in other nursing studies, new graduate nurses did not rate their immediate supervisors' authentic leadership behaviors highly, suggesting that access to an AL training program may be helpful for nurse managers. Relative to other occupations, nurses' assessment of their supervisors' authentic leadership was low. It is possible that these ratings are low because new graduates may not have a lot of contact with their managers. Nurse managers' have a large span of control which may limit their ability to authentically interact with their staff. Nevertheless, access to programs to develop nurse managers' AL behaviors appears to be important given the findings of our study. Considering, the strength of the relationship between AL and key job retention factors in this study, further research is needed to explore other mechanisms through which AL influences nurses' workplace well-being.

Psychological capital was also found to be significantly associated with lower levels of burnout among new graduate nurses. The results of this study support the idea that possessing certain protective personal resources may help to mitigate the damaging effects of workplace burnout. This is also encouraging since according to Luthans et al. (Luthans et al., 2007a), PsyCap is a positive psychological state that can be developed to protect individuals against challenges in their lives. Individuals with high psychological capital tend to focus on the positive aspects of their surroundings and view problems as solvable (Luthans et al., 2007a; Luthans et al., 2007b). These personal strengths may enable new graduate nurses to respond proactively when confronted with stressful workplace events. Our results suggest that systematic efforts to build psychological capital in nursing work settings would be valuable and that leaders should ensure that opportunities to develop this personal strength through proper training programs are in place (Luthans, Norman, Avolio, & Avey, 2008). Luthans et al. (Luthans, Avey, Avolio, Norman, & Combs, 2006) suggest implementing human resource development strategies that increase psychological assets while decreasing risk factors. Avey et al. (Avey et al., 2009) describe a PsyCap training program that facilitates the development of employee resiliency by teaching participants not only to identify potential workplace setbacks (e.g., missing a project deadline), but by having participants consider the realistic impact of the setback(s) as well as options for taking action. Through education and practice, participants are equipped with a learned cognitive process that allows them to develop both resiliency and optimism about future potential setbacks. Though limited, research has shown that participants tend to benefit from this approach.

Other researchers have supported the idea that positive personal resource factors can be promoted and developed (Fredrickson, 2001; Saks, 1994). Fredrickson (Fredrickson, 2001) highlights the importance of building positive emotions, by reminding employees to think positively and encouraging employees to find meaning in negative events. Saks (Saks, 1994) asserts that new employees should be provided with guided mastery experiences, performance feedback, and effective co-workers as models to strengthen existing psychological resources.

Our results support previous research linking burnout development to poor mental health and job dissatisfaction. Given the strong relationships established in the literature between nurse turnover, poor mental health and job related dissatisfaction, addressing workplace conditions that prevent burnout occurring in the first place is critical to the future of the nursing workforce. Our results suggest in order to maintain an already depleted healthcare workforce, it is especially important to ensure that new graduate nurses are supported in their transition to the workforce through the implementation of positive leadership practices and efforts to strengthen their interpersonal resources to deal with challenges in this transition.

5. Methodological Issues

Our study examined the influence of AL and PsyCap on employee burnout development, and ultimately, health and occupational satisfaction over a one year timeframe. The LGM allowed us to examine the change in burnout dimensions and how both AL and PsyCap may prevent the likelihood of an increase of burnout. Moreover this model allowed us to examine the role of both initial levels of burnout and change over time in decreasing the likelihood of good mental health and job satisfaction. However, as is often the case in longitudinal designs, many new nurses did not respond to the second survey. Although this dropout group did not differ substantially from the participating group in terms of demographic characteristics and on most substantive variables, this is a study limitation.

It is possible that higher levels of exhaustion and turnover may have contributed to their lack of response to the follow-up survey. Also, although separated by time we relied on self-report survey measures raising concerns about common method bias. Objective measures, such as supervisor ratings of some of the study variables would be advisable in future studies.

6. Conclusion and implications

The results of this study support theory and research suggesting that the quality of working conditions created by leaders may play an important role in the extent to which employees experience burnout and subsequent negative health and organizational outcomes. This study adds to the relatively few studies linking authentic leadership practices to workplace burnout over time. The results also add to our knowledge of how intrapersonal psychological resources, such as psychological capital, may influence new graduate burnout and its effect on their health and work satisfaction. Our findings support the notion that building authentic leadership skills among managers and strengthening nurses' positive intrapersonal resources (Psycap) may be promising core strategies for retaining newcomers to the nursing profession and for sustaining the future of the nursing workforce.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

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References

Abdi, M. F., Kaviani Hossein, K. M., & Momeni Araghi, A. A. F. (2007). The relationship between burnout and mental health among nurses. *Tehran Univ Med J, 65*(6), 65–75.

Aiken, L. H., & Salmon, M. E. (1994). Health care workforce priorities: what nursing should do now. *Inquiry*, 318–329.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *J Am Med Assoc, 288*(16), 1987–1993.

Avey, J. B., Luthans, F., & Jensen, S. M. (2009). Psychological capital: a positive resource for combating employee stress and turnover. *Hum Resour Manage, 48*(5), 677–693.

Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: getting to the root of positive forms of leadership. *Leadership Quart, 16*, 315–338. http://dx.doi.org/10.1016/j.leaqua.2005.03.001

Avolio, B. J., & Wernsing, T. S. (2008). Practicing authentic leadership. In S. J. Lopez (Ed.), *Positive psychology: exploring the best in people* (vol. 4) (pp. 147–165). Westport CT: Greenwood Publishing Group.

Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., & May, D. (2004). Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviours. *Leadership Quart, 15*, 801–823. http://dx.doi.org/10.1016/j.leaqua.2004.09.003

Avolio, B. J., Gardner, W. L., & Walumbwa, F. O. (2007). *Authentic Leadership Questionnaire (ALQ).* Mind Garden Inc., retrieved from http://www.mindgarden.com

Avolio, B. J., Walumbwa, F. O., & Weber, T. J. (2009). Leadership: current theories, research, and future directions. *Ann Rev Psychol, 60*, 421–449. http://dx.doi.org/10.1146/annurev.psych.60.110707.163621

Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: a review of intervention programs. *Patient Educ Counsel, 78*, 184–190.

Balogun, J. A., Titiloye, V., Balogun, A., Oyeyemi, A., & Katz, J. (2002). Prevalence and determinants of burnout among physical and occupational therapists. *J Allied Health, 31*(3), 131–139, retrieved from http://search.proquest.com/docview/72088215?accountid=13698

Bandura, A. (1997). *Self-efficacy: the exercise of control.* New York: Freeman.

Becker, J. L., Milad, M. P., & Klock, S. C. (2006). Burnout, depression, and career satisfaction: cross-sectional study of obstetrics and gynecology residents. *Am J Obstet Gynecol, 195*(5), 1444–1449.

Beecroft, P. C., Kunzman, L., & Krozek, C. (2001). RN internship: outcomes of a one-year pilot program. *J Nurs Admin, 31*(12), 575–582, retrieved from http://search.proquest.com/docview/72381954?accountid=13698

Beecroft, P. C., Dorey, F., & Wenten, M. (2008). Turnover intention in new graduate nurses. A multivariate analysis. *J Advanc Nurs*, *62*(1), 41–52. http://search.proquest.com/docview/70411100?accountid=1369

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychol Bull*, *88*, 588–606.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: a structural equation approach*. Hoboken, NJ: Wiley.

Bowles, C., & Candela, L. (2005). First job experiences of recent RN graduates: improving the work environment. *J Nurs Admin*, *35*(3), 130–137, retrieved from http://journals.lww.com/jonajournal/pages/default.aspx

Boychuk-Duchscher, J. E., & Cowin, L. S. (2004). The experience of marginalization in new nursing graduates. *Nurs Outlook*, *52*(6), 289–296.

Brewer, C. S., Kovner, C. T., Greene, W., Tukov-Shuser, M., & Djukic, M. (2011). Predictors of actual turnover in a national sample of newly licensed registered nurses employed in hospitals. *J Adv Nurs*, *68*(3), 521–538. http://dx.doi.org/10.1111/j.1365-2648.2011.05753.x

Burke, R. J., & Greenglass, E. R. (1995). A longitudinal study of psychological burnout in teachers. *Hum Relat, 48*, 187–202.

Canadian Institute of Health Information. (2005). *Custom data & documents*. Ottawa: ON., retrieved from http://www.cihi.ca/cihi-ext-portal/internet/en/home/home/cihi000001

Canadian Institute of Health Information. (2009). *Custom Data & Documents*. Ottawa: ON., retrieved from http://www.cihi.ca/cihi-ext-portal/internet/en/home/home/cihi000001

Cho, J., Laschinger, H. K. S., & Wong, C. (2006). Workplace empowerment, work engagement and organizational commitment of new graduate nurses. *Nurs Leadership, 19*(3), 43–60.

Cummings, G., Lee, H., MacGregor, T., Wong, C., Davy, M., Paul, L., et al. (2008). Factors contributing to nursing leadership: a systematic review. *J Health Serv Res Pol, 13*(4), 240–248.

Dillman, D. A. (2007). *Mail and internet surveys: the tailored design method* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Duffield, C., Gardner, G., & Catling-Paull, C. (2008). Nursing work and the use of nursing time. *J Clin Nurs, 17*(24), 3269–3274.

Duncan, T. E., Duncan, S. C., & Strycker, L. A. (2011). *An introduction to latent variable growth curve modeling: concepts, issues and applications* (2nd ed.). New York: Psychology Press.

Eigel, K. M., & Kuhnert, K. W. (2005). Authentic development: leadership development level and executive effectiveness. *Monogr Leadership Manage, 3*, 357–385.

Erickson, R. J., & Grove, W. J. (2008). Emotional labor and health care. *Sociology Compass, 2*(2), 704–733.

Fochsen, G., Sjögren, K., Josephson, M., & Lagerström, M. (2005). Factors contributing to the decision to leave nursing care: a study among Swedish nursing personnel. *J Nurs Manage, 13*(4), 338–344.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *Am Psychol, 56*(3), 218.

Garrett, D. K., & McDaniel, A. M. (2001). A new look at nurse burnout: the effects of environmental uncertainty and social climate. *J Nurs Admin, 31*(2), 91–96.

Giallonardo, L. M., Wong, C. A., & Iwasiw, C. L. (2010). Authentic leadership of preceptors: predictor of new graduate nurses' engagement and job satisfaction. *J Nurs Manage, 18*(8), 993–1003. http://dx.doi.org/10.1111/j.1365-2834.2010.01126.x

Greenglass, E. R., Burke, R. J., & Fiksenbaum, L. (2001). Workload and burnout in nurses. *J Commun Appl Soc Psychol, 11*(3), 211–215.

Hauge, L. J., Einarsen, S., Knardahl, S., Lau, B., Notelaers, G., & Skogstad, A. (2011). Leadership and role stressors as departmental level predictors of workplace bullying. *Int J Stress Manage, 18*(4), 305–323. http://dx.doi.org/10.1037/a0025396

Ingersoll, G. L., Olsan, T., Drew-Cates, J., DeVinney, B. C., & Davies, J. (2002). Nurses' job satisfaction, organizational commitment, and career intent,. *J Nurs Admin, 32*(5), 250–263.

Jensen, S. M., & Luthans, F. (2006). Entrepreneurs as authentic leaders: impact on employees' attitudes. *Leadership Organ Dev J, 27*(8), 646–661. http://dx.doi.org/10.1108/01437730610709273

Jöreskog, K. G., & Sörbom, D. (1984). *LISREL VI user's guide*. Mooresville, IN: Scientific Software.

Kane-Urrabazo, C. (2006). Management's role in shaping organizational culture. *J Nurs Manage, 14*(3), 188–194.

Kanter, R. M. (1977). *Men and women of the corporation*. New York: Basic Books.

Kelloway, E. K., & Day, A. L. (2005). Building healthy workplaces: what we know so far. *Can J Behav Sci, 37*(4), 223.

Kovner, C. T., Brewer, C. S., Fairchild, S., Poornima, S., Kim, H., & Djukic, M. (2007). Newly licensed RNs' characteristics, work attitudes, and intentions to work. *Am J Nurs, 107*(9), 58–70. http://dx.doi.org/10.1097/01.NAJ.0000287512.31006.66

Kuoppala, J., Lamminpää, A., Liira, J., & Vainio, H. (2008). Leadership, job well-being, and health effects—a systematic review and a meta-analysis. *J Occup Environ Med, 50*(8), 904–915.

Laschinger, H. K. S., Leiter, M., Day, A., & Gilin, D. (2009). Workplace empowerment, incivility, and burnout: impact on staff nurse recruitment and retention outcomes,. *J Nurs Manage, 17*(3), 302–311. http://dx.doi.org/10.1111/j.1365-2834.2009.00999.x

Laschinger, H. K. S., Grau, A. L., Finegan, J., & Wilk, P. (2010). New graduate nurses' experiences of bullying and burnout in hospitals settings. *J Adv Nurs, 66*(12), 2732–2742. http://dx.doi.org/10.1111/j.1365-2648.2010.05420.x

Laschinger, H. K. S., Finegan, J., & Wilk, P. (2011). Situational and dispositional influences on nurses' workplace well-being: the role of empowering unit leadership. *Nurs Res, 60*(2), 124–131.

Laschinger, H. K. S., Wong, C. A., & Grau, A. L. (2012a). Authentic leadership, empowerment and burnout: a comparison in new graduates and experienced nurses. *J Nurs Manage.*

Laschinger, H. K. S., Wong, C. A., & Grau, A. L. (2012b). The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: a cross-sectional study. *Int J Nurs Stud, 49*(10), 1266–1276.

Lavoie-Tremblay, M., O'Brien-Pallas, L., Gélinas, C., Desforges, N., & Marchionni, C. (2008). Addressing the turnover issue among new nurses from a generational viewpoint. *J Nurs Manage, 16*, 724–733. http://dx.doi.org/10.1111/j.13652934.2007.00828.x

Leiter, M. P., & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *J Organ Behav, 9*(4), 297–308.

Leiter, M. P., & Maslach, C. (2004). Areas of worklife: a structured approach to organizational predictors of job burnout. In P. L. Perrewe, & D. C. Ganster (Eds.), *Research in occupational stress and well-being* (pp. 91–134). Oxford: Elsevier.

Leiter, M., & Maslach, C. (2009). Nurse turnover: the mediating role of burnout,. *J Nurs Manage, 17*, 331–339. http://dx.doi.org/10.1111/j.1365-2834.2009.01004.x

Leiter, M. P., Harvie, P., & Frizzell, C. (1998). The correspondence of patient satisfaction and nurse burnout. *Soc Sci Med, 47*(10), 1611–1617.

Luthans, F., & Church, A. H. (2002). Positive organizational behavior: developing and managing psychological strengths [and executive commentary]. *Acad Manage Exec (1993–2005), 57*–75.

Luthans, K. W., & Jensen, S. M. (2005). The linkage between psychological capital and commitment to organizational mission: a study of nurses. *J Nurs Admin, 35*(6), 304.

Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management. *Organ Dyn, 33*, 143–160.

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: toward a micro-intervention. *J Organ Behav, 27*(3), 387–393.

Luthans, Fred, Avolio, Bruce, J., Avey, James, B., et al. (2007). *Positive psychological capital: measurement and relationship with performance and satisfaction*. Leadership Institute Faculty Publications. Paper.

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: measurement and relationship with performance and satisfaction. *Person Psychol, 60*, 541–572.

Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate–employee performance relationship. *J Organ Behav, 29*(2), 219–238.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. A. (2002). Comparison of Methods to Test Mediation and Other Intervening Variable Effects Psychological Methods. *APA., 7*(1), 83–104. http://dx.doi.org/10.1037//1082-989X.7.1.83

Maslach, C. (2004). *Different perspectives on job burnout*. USA: American Psychological Association. http://dx.doi.org/10.1037/004284

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: how organizations cause personal stress and what to do about it* (1st ed.). San Francisco: Jossey-Bass.

Melchior, M. E., Bours, G. J., Schmitz, P., & Wittich, Y. (1997). Burnout in psychiatric nursing: a meta-analysis of related variables. *J Psychiat Mental Health Nurs, 4*(3), 193–201.

Michie, S., & Williams, S. (2003). Reducing work related psychological ill health and sickness absence: a systematic literature review. *Occup Environ Med, 60*(1), 3–9. http://dx.doi.org/10.1136/oem.60.1.3

Moore, J. E. (2000a). Why is this happening? A causal attribution approach to work exhaustion consequences. *Acad Manage Rev, 25*(2), 335–349.

Moore, J. E. (2000b). One road to turnover: an examination of work exhaustion in technology professionals. *Manage Inform Syst Quart, 24*(1), 141–168.

Morse, G., Salyers, M. P., Rollins, A. L., Monroe-DeVita, M., & Pfahler, C. (2012). Burnout in mental health services: a review of the problem and its remediation. *Admin Pol Ment Health Ment Health Serv Res, 39*(5), 341–352.

Peterson, U., Demerouti, E., Bergström, G., Samuelsson, M., Åsberg, M., & Nygren, Å. (2008). Burnout and physical and mental health among Swedish healthcare workers. *J Adv Nurs, 62*(1), 84–95.

Piko, B. F. (2006). Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: a questionnaire survey. *Int J Nurs Stud, 43*(3), 311.

Pineau Stam, L. M., Laschinger, H. K. L., Regan, S., & Wong, C. A. (2013). The influence of personal and workplace resources on new graduate nurses' job satisfaction,. *J Nurs Manag,* http://dx.doi.org/10.1111/jonm.12113 early view

Roberts, S. J., Scherer, L. L., & Bowyer, C. J. (2011). Job stress and incivility what role does psychological capital play? *J Leadership Organ Stud, 18*(4), 449–458.

Rudman, A., & Gustavsson, J. P. (2011). Early-career burnout among new graduate nurses: a prospective observational study of intra-individual change trajectories. *Int J Nurs Stud, 48*(3), 292–306.

Saks, A. M. (1994). Moderating effects of self-efficacy for the relationship between training method and anxiety and stress reactions of newcomers. *J Organ Behav, 15*(7), 639–654.

Salyers, M. P., Hudson, C., Morse, G., Rollins, A. L., Monroe-DeVita, M., Wilson, C., et al. (2011). BREATHE: a pilot study of a one-day retreat to reduce burnout among mental health professionals. *Psychiat Serv (Washington, DC), 62*(2), 214.

Schaufeli, W. B., & Buunk, B. P. (2003). Burnout: an overview of 25 years of research and theorizing. In M. J. Schabracq, J. A. M. Winnubst, & C. L. Cooper (Eds.), *Handbook of work and health psychology* (pp. 383–425). Chichester, England: Wiley.

Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). Maslach burnout inventory-general survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *The*

maslach burnout inventory-test manual (3rd ed., vol. 4, pp. 22–26). Palo Alto, CA: Consulting Psychologists Press.

Shanafelt, T. D., Balch, C. M., Bechamps, G. J., Russell, T., Dyrbye, L., Satele, D., et al. (2009). Burnout and career satisfaction among American surgeons. *Ann Surg*, *250*(3), 463–471.

Shaver, K. H., & Lacey, L. M. (2003). Job and career satisfaction among staff nurses: effects of job setting and environment. *J Nurs Admin*, *33*(3), 166–172.

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the state hope scale. *J Personal Soc Psychol*, *70*, 321–335, retrieved from https://enablemob.wustl.edu/OT572D-01/RequiredArticles/Snyder_HopeScale.pdf

Spooner-Lane, R., & Patton, W. (2007). Determinants of burnout among public hospital nurses. *Aust J Adv Nurs*, *25*(1), 8–16.

Steiger, J. H. (1990). Structural model evaluation and modification: an interval estimation approach. *Multivariate Behav Res*, *25*, 173–180. http://dx.doi.org/10.1207/s15327906mbr2502_4

Stouten, J., Baillien, E., Van den Broek, A., Camps, J., Dewitte, H., & Euwema, M. (2010). Discouraging bullying: the role of ethical leadership and its effect on the work environment. *J Business Ethics*, *95*(1), 17–27, retrieved from http://www.springer.com/social+sciences/applied+ethics/journal/10551

Tanaka, J. S. (1993). Multifaceted conceptions of fit in structure equation models. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Taylor, A. B., MacKinnon, D. P., & Tein, J.-Y. (2008). Tests of the three-path mediated effect. *Organ Res Methods*, *11*(2), 241–269.

Thomas, K. M., & Williams, K. L. (1995). The role of burnout on organizational attachment and career mobility. In *Paper presented at work stress and health 95*. Washington, DC: Creating Healthier Workplaces.

Tokuda, Y., Hayano, K., Ozaki, M., Bito, S., Yanai, H., & Koizumi, S. (2009). The inter-relationships between working conditions, job satisfaction, burnout and mental health among hospital physicians in Japan: a path analysis. *Ind Health*, *47*(2), 166–172.

Vahey, D. C., Aiken, L. H., Sloane, D. M., Clarke, S. P., & Vargas, D. (2004). Nurse burnout and patient satisfaction. *Med Care*, *42*(2 Suppl.), II57–II66. http://dx.doi.org/10.1097/01.mlr.0000109126.50398.5a

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: development and validation of a theory-based measure. *J Manage*, *34*(1), 89–126. http://dx.doi.org/10.1177/0149206307308913

Ware, J. E., Jr., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*, 473–483.

Wendt, H., Euwema, M. C., & Van Emmerik, I. J. (2009). Leadership and team cohesiveness across cultures. *Leadership Quart*, *20*(3), 358–370.

Westermann, C., Kozak, A., Harling, M., & Nienhaus, A. (2014). Burnout intervention studies for inpatient elderly care nursing staff: systematic literature review. *Int J Nurs Stud*, 63–71.

Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Struct Equ Modeling*, *15*(1), 23–51. http://dx.doi.org/10.1080/10705510701758166

Wong, C. A., & Cummings, G. (2009). The influence of authentic leadership behaviors on trust and work outcomes of health care staff. *J Leadership Stud*, *3*(2), 6–23.

Wong, C. A., Laschinger, H. K. S., & Cummings, G. G. (2010). Authentic leadership and nurses' voice behaviour and perceptions of care quality. *J Nurs Manage*, *18*(8), 889–900. http://dx.doi.org/10.1111/j.1365-2834.2010.01113.x

Zangaro, G. A., & Soeken, K. L. (2007). A meta-analysis of studies of nurses' job satisfaction. *Res Nurs Health*, *30*(4), 445–458.

Zopiatis, A., & Constanti, P. (2010). Leadership styles and burnout: is there an association? *Int J Contemp Hospital Manage*, *22*(3), 300–320.