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Antecedents, mediators, and outcomes of authentic leadership in healthcare: A systematic review

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ABSTRACT

Background: Leaders are essential in every organization to achieve patient safety and healthy work environments. Authentic leadership is a relational leadership style purported to promote healthy work environments that influence staff performance and organizational outcomes. Given recent growth in authentic leadership research in healthcare and the importance of new knowledge to inform leadership development, there is an obligation to determine what is known about the antecedents and outcomes of authentic leadership in healthcare settings and clarify mechanisms by which authentic leadership affects healthcare staff and patient outcomes.
Objectives: The aim of this systematic review was to examine the antecedents, mediators and outcomes associated with authentic leadership in healthcare.
Design: Systematic review.
Data sources: The search strategy included 11 electronic databases: ABI Inform Dateline, Academic Search Complete, Cochrane Database of Systematic Reviews, PubMed, CINAHL, Embase, ERIC, PsycINFO, Scopus, Web of Science, and ProQuest Dissertations & Theses. The search was conducted in January 2017. Published English-only quantitative research that examined the antecedents, mediators and outcomes of authentic leadership practices of leaders in healthcare settings was included.
Review methods: Quality assessment, data extractions, and analysis were completed on all included studies. Data extracted from included studies were analyzed through descriptive and narrative syntheses. Content analysis was used to group antecedents, outcomes and mediators into categories which were then compared to authentic leadership theory.
Results: 1036 titles and abstracts were screened yielding 136 manuscripts for full-text review which resulted in 21 included studies reported in 38 manuscripts. Significant associations between authentic leadership and 43 outcomes were grouped into two major themes: healthcare staff outcomes with 5 subthemes (personal psychological states, satisfaction with work, work environment factors, health & well-being, and performance) and patient outcomes. There were 23 mediators between authentic leadership and 35 different outcomes in the included studies and one antecedent of authentic leadership.
Conclusions: Findings of this review provide support for authentic leadership theory and suggest need for additional testing in future studies using longitudinal and interventional designs in more varied healthcare settings with diverse and interprofessional healthcare samples. Knowledge generated through this systematic review provides a more comprehensive understanding of authentic leadership, which can be used to educate future leaders and has the potential to improve leadership development strategies and positive outcomes in healthcare workplaces.

What is known about the topic?

- A substantial body of research in nursing has shown significant associations between relational leadership styles and a wide variety of staff and patient outcomes.
- Authentic leadership is a relatively new relational leadership style that is asserted to influence staff performance and organizational outcomes by aiming to help people find meaning at work and

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encouraging transparent relationships that build trust and optimism and promote inclusive and healthy work environments.
- Despite recent growth in authentic leadership research in healthcare there is a need to understand the associations between authentic leadership and its antecedents, mediators, and outcomes to guide leadership practice in organizations and future research.

What this paper adds

- Significant associations between authentic leadership and a wide variety of mediators and staff outcomes such as job satisfaction, structural empowerment, work engagement, and trust in the manager were identified, and there were negative associations between authentic leadership and negative workplace behaviours (such as bullying and incivility) and burnout.
- Since only one study included an antecedent of authentic leadership, studies examining potential predictors and strategies for developing authentic leadership are warranted.
- The adapted model of authentic leadership based on review findings may serve as a guide to understand the complex mediators and outcomes of authentic leadership in healthcare.

1. Introduction

Managers in healthcare organizations are responsible for facilitating the conditions for nurses' and other care providers' work by framing the quality of support, information, and resources that are available in work areas (Laschinger et al., 2009; Shirey, 2006). Nurses respond positively to their work and trust their managers when they perceive their leaders are authentic, open, truthful, and willing to invite their participation in decision-making (Wong and Cummings, 2009a; Wong et al., 2010). In addition, nurses who perceive their leaders to be authentic feel empowered and supported in their work (Laschinger et al., 2012). According to Wong and Cummings (2009a), authentic leadership is rooted in humanistic values which are at the core of nursing and other health professions. Moreover, authentic leadership promotes a healthy work environment wherein everyone feels respected, trusted and appreciated for their contributions (Blake et al., 2012).

Luthans and Avolio (2003) defined authentic leadership as "a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviours on the part of leaders and associates, fostering positive self-development" (p. 243). According to Avolio et al. (2004), authentic leaders facilitate higher quality relationships leading to active engagement of employees in workplace activities, which results in greater job satisfaction and higher productivity and performance. Moreover, authentic leaders are able to achieve high levels of authenticity because they know who they are and understand their values which guide them in their work (Avolio et al., 2004). Authentic leadership is proposed as the root component of effective leadership that is needed to build healthy work environments to promote positive healthcare staff and patient outcomes (Avolio et al., 2004; Wong and Cummings, 2009a). A healthy work environment refers to a safe, empowering, and satisfying environment and a place that supports optimal health and safety of staff and patients (ANA, 2018). Recently, authentic leadership theory (Avolio et al., 2004) has gained empirical support in both management and nursing literature (Laschinger et al., 2015) and can be considered a guide for researchers and leaders to identify the process by which leaders influence staff attitudes and behaviours. The purpose of this study was to conduct a systematic review of the antecedents, mediators, and outcomes of authentic leadership studies in healthcare.

2. Theoretical framework

Philosophical conceptions of authenticity within the leadership literature were observed in the 1960s (Novicevic et al., 2006) and included humanistic psychology and the work of Maslow (1968) and Rogers (1961). In early 2000, unprecedented concerns about the ethical conduct of leaders based on high profile examples of corporate scandals caused leadership authors such as George (2003) and Luthans and Avolio (2003) to appeal for a new form of values-based leadership called authentic leadership (Avolio et al., 2004; Gardner et al., 2011). Luthans and Avolio (2003) illustrated a robust conceptualization of authentic leadership and its development because they explained the theoretical underpinnings of their theory derived from positive organizational behaviour (Luthans, 2002), transformational/full-range leadership (Avolio, 1999), and ethical perspective-taking (Kegan, 1982).

The authentic leader builds healthier work environments through four key components which are balanced processing, relational transparency, internalized moral perspective, and self-awareness (Fig. 2). *Self-awareness* refers to demonstrating an understanding of how one makes meaning of the world and how that meaning impacts the way one views himself or herself over time (Kernis, 2003). *Relational transparency* means presenting one's authentic self to others by openly sharing information and expressing their true feelings while trying to minimize displays of inappropriate emotions (Gardner et al., 2005). *Balanced processing* concerns leaders who show that they objectively analyze all relevant data before making a decision; such leaders also solicit views that challenge their deeply held positions (Gardner et al., 2005). Finally, *internalized moral perspective* is a form of self-regulation that is guided by internal moral standards and values rather than group, organizational and societal pressures (Walumbwa et al., 2008).

Authentic leaders are able to enhance the engagement, motivation, commitment, satisfaction, and involvement required from staff to constantly improve their work and performance outcomes through the development of personal identification with the leader and social identification with the work unit/organization (Kark and Shamir, 2002). *Personal identification* refers to a process whereby the individual's belief about a leader becomes self-defining (Avolio and Gardner, 2005) while *social identification* is the degree to which individuals feel they belong in their work group and the importance of group membership to their identity (Hogg, 2001). In combination with identification processes, Avolio et al. (2004) posited that authentic leaders draw from their personal, positive psychological resources of hope, trust, positive emotion, and optimism to model and promote the development of these in others. To summarize, Avolio et al.'s theory illustrated that authentic leadership influences staff attitudes and behaviours through the key psychological processes of identification, hope, positive emotions, optimism, and trust.

3. Literature review and rationale for review

Results of two systematic reviews of the relationships between leadership styles of nursing leaders and staff and patient outcomes formed part of the background for this review. Cummings et al.'s (2010) assessment of relationships between various leadership styles and nurse outcomes suggested that relationally-oriented leadership practices contribute to improved outcomes for the nursing workforce, work environments and productivity and effectiveness of healthcare organizations. Although this review (studies published up to May 2009) did not include any studies of authentic leadership, it is considered a relationally focused leadership style and hence, lends support for the notion that authentic leadership may have similar effects. Cummings et al. (2010) also argued that despite a plethora of leadership theories, the mechanisms of action for specific leadership styles and outcomes were still not well understood. In 2013, Wong et al.'s (2013) systematic review of studies (published up to July 2012) testing the relationship between nursing leadership and observed (not nurse assessed) patient outcomes showed that relational leadership styles were positively associated with some types of patient outcomes. There was an association between relational leadership and the reduction of adverse events

Table 1
Literature Search: Electronic Databases.

Database January 1, 2004–January 31, 2017	Search terms	Number of titles
Main Search Terms/Concepts:	Nurse AND Authentic Leadership AND Patient Outcome OR Healthcare Professionals AND Staff Outcome	
ABI/INFORM Dateline	"Authentic leader*" AND Staff OR employee* OR "healthcare professional*" OR worker OR nurs* OR doctor* OR physician* OR "healthcare sector*" OR "healthcare discipline*" OR "healthcare" OR pharmacist* OR anesthesiologist* OR cardiologist* OR dermatologist* OR endocrinologist* OR gastroenterologist* OR surgeon* OR hematologist* OR immunologist* OR nephrologist* OR neurologist* OR gynecologist* OR oncologist* OR ophthalmologist* OR physiotherapist* OR psychiatrist* OR radiologist* OR urologist* occupational therapist* AND Patient* OR client* AND Outcome* OR influence* OR result* OR effect* OR relation* OR consequence* OR impact*	204
Academic Search Complete	As above	188
Cochrane Database of Systematic Reviews (CDSR)	As above	0
ERIC	As above	359
PsycINFO	As above	16
Scopus	As above	16
Web of Science	As above	52
ProQuest Dissertations & Theses	As above	18
PubMed	"Authentic leadership" (All Field)	54
CINAHL	"Authentic leadership"	54
Embase	Authentic leadership.mp.	63
Total Titles and abstracts		**1036**
Total minus duplicates		942
Manual search		6
Papers reviewed (full-text)		136
Final Selection (after full-text review)		**38 papers = 21 studies**

through leaders' influence on human resource variables (staff expertise, turnover, absenteeism, overtime, and nurse to patient ratios) that may be connected to patient outcomes. Despite the significant association between relational leadership and patient outcomes none of the included studies examined authentic leadership.

There has been a substantial body of research in other disciplines such as business and industry that examined the association between authentic leadership and outcomes such as organizational commitment (Gatling et al., 2016), organizational citizenship (Valsania et al., 2012), and trust in the supervisor (Xiong et al., 2016). Gardner et al.'s (2011) review of authentic leadership studies (published up to the end of December 2010) aimed to clarify the authentic leadership construct and the evidence for its antecedents and outcomes. Key findings from their review of 91 studies included: solid support for the predictions derived from authentic leadership theory; few studies explored relationships between antecedents and authentic leadership; the high volume of cross-sectional studies limited the interpretations of causality; and a relatively high percentage of qualitative studies prompted authors to recommend greater focus on the credibility and transferability of findings in future research. In summary, Gardner et al.'s (2011) review suggested a need for further research using more rigorous and diverse methods to strengthen confidence in the nomological validity of authentic leadership and examination of the relationships of specific components of authentic leadership and various antecedents and outcomes. As far as we know, Gardner et al.'s (2011) review is the only review of authentic leadership research to date and was not specific to healthcare although three studies by Canadian nursing authors were included in the review (Giallonardo et al., 2010; Wong et al., 2010; Wong and Cummings, 2009b).

Shirey (2006) and Wong and Cummings (2009a) presented the relevance and applicability of authentic leadership theory to the advancement of nursing leadership practice and research. Shirey was one of the first in nursing to define and describe the attributes of an authentic leader in nursing based on the work of Avolio et al. (2004) and George (2003). Wong and Cummings (2009a) outlined the origins and key elements of the authentic leadership theory as proposed by Avolio et al. (2004), reviewed the theoretical, conceptual and measurement issues, and advocated the application of authentic leadership to contemporary nursing issues. Although the concept of authentic leadership is still considered relatively new in healthcare, there have been a number of empirical studies linking it with work attitudes and outcomes in nursing but few studies of other healthcare professions (Wong and Laschinger, 2013). In response to the growing number of studies examining authentic leadership in nursing and healthcare since 2009 and the fact that previous reviews have not included literature published in the past five to eight years, a systematic review of the antecedents, mediators and outcomes of authentic leadership within healthcare including nursing and other healthcare professionals is needed. Therefore, our research questions were:

1. What antecedents are associated with authentic leadership in healthcare?
2. What outcomes for healthcare staff and patients are associated with authentic leadership?
3. What are the mediators of relationships between authentic leadership and healthcare staff and patient outcomes?

4. Methods

This review was conducted using guidelines for systematic reviews from the Centre for Reviews and Dissemination (CRD, 2009) at the University of York. The steps of the CRD process include: development of the review question and study inclusion and exclusion criteria defined using the PICOS elements (population, interventions, comparators, outcomes and study designs); delineation of the search process to identify research evidence; selection of studies for inclusion followed by data extraction and then quality assessment of included studies; and finally synthesis of results.

4.1. Search strategy and data sources

The search strategy (Table 1) for this work was completed in January 2017 by using the following 11 electronic databases: ABI Inform Dateline, Academic Search Complete, Cochrane Database of Systematic Reviews (CDSR), PubMed, CINAHL, Embase, ERIC, PsycINFO, Scopus, Web of Science, and ProQuest Dissertations & Theses. The search

Table 2
Summary of Quality Assessment.

Criteria – 21 included quantitative studies	No. of studies	
Scores	YES (=1)	NO (=0)
Design:		
Prospective studies	21	0
Used probability sampling	11	10
Sample:		
Appropriate/justified sample size	20	1
Sample drawn from more than one site	16	5
Anonymity protected	21	0
Response rate > 60%	4	17
Measurement:		
Reliable measure of leadership	21	0
Valid measure of leadership	21	0
*Authentic Leadership was observed rather than self-reported	20	1
Internal consistency $\geq$0.70 when scale used	19	2
Theoretical model/framework used	21	0
Statistical Analyses:		
Correlations analyzed when multiple effects studied	21	0
Management of outliers addressed	21	0
*This item scored 2 points. All others scored 1 point		
Weak (0–4) Moderate (5–9) Strong (10–14)	Moderate (n = 1)	Strong (n = 20)

included databases that publish health-related research in order to identify studies that were specific to healthcare disciplines. Furthermore, ABI/INFORM Dateline, Academic Search Complete, ERIC, and PsycINFO were also searched as they contain a large body of research on leadership approaches including authentic leadership. Finally, theses and dissertations were searched to identify research work that may not yet be published elsewhere. A combination of similar search terms was used to search all databases. The search terms were selected based on the core concepts of authentic leadership theory which are authentic leadership, antecedents, mediators and outcomes (staff and patient). Additional strategies were implemented including hand-searching reference lists of all included studies and specific journals such as, *Journal of Nursing Management* and *Health Care Management Review*, and others for additional manuscripts as these journals are known to publish studies of leadership.

4.2. Inclusion and exclusion criteria

Titles and abstracts were selected for screening if they met all of the following inclusion criteria: peer-reviewed research; English language full-text publication available; full-text published between January 1, 2004 and January 31, 2017 as authentic leadership theory did not appear in the literature prior to the publication of the work by Avolio et al. (2004); involve leaders and providers of patient, client and/or resident care in a variety of healthcare settings; measure authentic leadership; and measure antecedents, mediators and outcomes of authentic leadership. Also, the PICOS framework was used to guide development of the inclusion and exclusion criteria, with consideration given to populations, interventions or comparators, outcomes, and study designs (CRD, 2009). Studies with quantitative data and using experimental, quasi-experimental or correlational designs were included. Manuscripts that described opinions about authentic leadership, were conducted in fields other than healthcare (e.g., education), or did not have enough (i.e., not full-text) information for data extraction were excluded.

4.3. Screening and study selection

Two reviewers (BA/CW) assessed the eligibility of included studies through two screenings. After elimination of duplicates, the first screening included review of all titles and abstracts using inclusion criteria and a second reviewer screened all titles and abstracts. All manuscripts retrieved from databases and manual searches that passed the first stage screening proceeded to full-text screening using inclusion criteria. Any discrepancies between reviewers were resolved by discussion with a third author (GC) and consensus was reached in all cases.

4.4. Data extraction

The following data were extracted from the included studies: author, year, journal, country, study purpose, theoretical framework or conceptual model, conceptualization or definition of authentic leadership utilized, methodological approach, setting, sampling method, sample size, description of participants, measurement instruments, reported reliability and validity, identified antecedents, mediators and outcomes of authentic leadership, analysis and statistical techniques, and significant and non-significant results. Data extraction of included studies were confirmed by two reviewers (BA/CW).

4.5. Quality appraisal

Each published primary study was reviewed twice for methodological quality by two research team members (BA/CW) using a quality rating tool adapted from an instrument used in previously published systematic reviews (Cummings and Estabrooks, 2003; Cummings et al., 2008; Estabrooks et al., 2003; Wong and Cummings, 2007). This tool is aimed to assess methodological quality of correlational studies in four areas of a study: research design, sampling, measurement, and statistical analysis. Thirteen criteria were evaluated in the tool, with a total of fourteen possible points (Table 2). Based on assigned points, studies were categorized as low (0–4), moderate (5–9), or strong (10–14) quality.

4.6. Analysis

Data extracted were examined through descriptive and narrative synthesis. For the descriptive synthesis, study characteristics were analyzed to identify commonalities and differences and possible inferences based on common characteristics, such as authors, where studies were completed, years of study completion, participant characteristics, how authentic leadership was measured and defined by researchers, theoretical or conceptual frameworks used, instruments used to examine all variables, and analytic techniques utilized. Using results of the main statistical analysis in each study, associations between authentic leadership and antecedents, mediators and outcomes showing a direction of effect (positive or negative) and level of statistical significance ($p \leq .05$) were examined.

Narrative synthesis is described as the exploration of relationships within and between studies (CRD, 2009) and involved a number of steps to analyze relationships among authentic leadership, its antecedents, mediators and outcomes. Both deductive and inductive approaches were used for synthesis. First, significant and non-significant antecedents, mediators and outcomes of authentic leadership were examined using content analysis procedures by two team members (BA/CW) independently (Krippendorff, 2013). Outcomes were reviewed for common characteristics and grouped into categories based on concepts in the theory or new categories based on content analysis findings. The same was completed for antecedents and mediators. Once the coding was completed, authors compared results and reconciled discrepancies through discussion and consensus. Final categories were compared to the original authentic leadership theory (Avolio et al., 2004) to determine how extensively review findings aligned with or enhanced the model. An adapted model was developed that represented findings from this review.

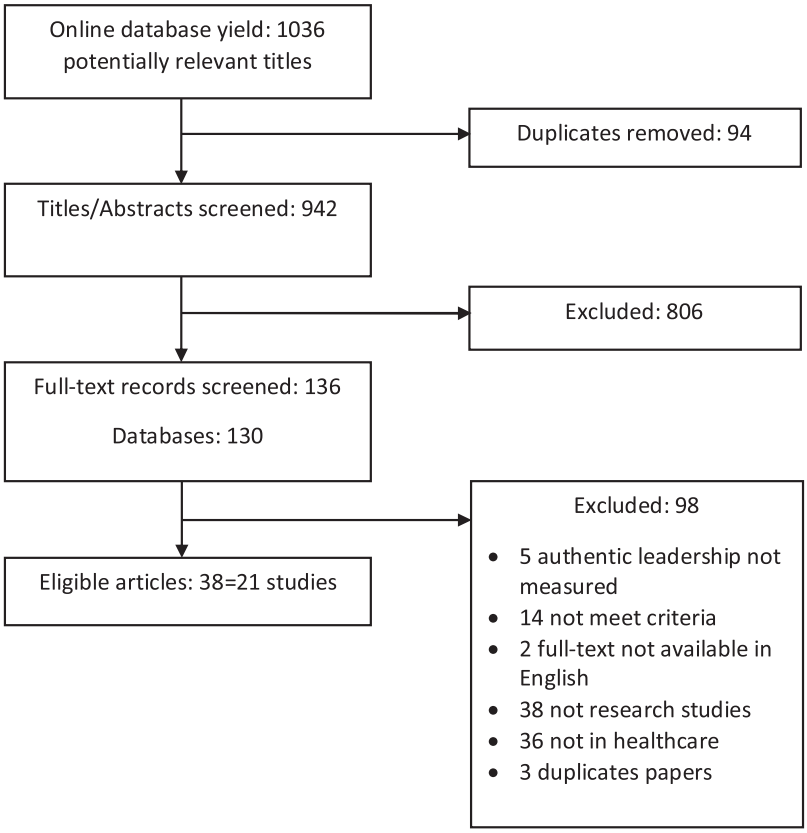

Fig. 1. Selection of manuscripts for review.

5. Results

5.1. Search results

As presented in Table 1, the electronic database search yielded 1036 titles and abstracts. After removal of duplicates, a total of 942 titles and abstracts were screened using inclusion and exclusion criteria and yielded 136 potentially relevant manuscripts retrieved for full-text review including 6 additional manuscripts identified through review of reference lists of included studies and specific journals. After final full-text review, 38 manuscripts representing 21 studies were included in this review (Fig. 1). Since there were multiple papers (2–6) from five studies (Laschinger et al., 2012; Laschinger and Fida, 2014a; Laschinger et al., 2016; Stander et al., 2015; Wong et al., 2010) the multiple papers for each study were counted as one study in the analyses and results.

5.2. Quality appraisal

The summary results of the quality appraisals are reported in Table 2. All studies were rated as moderate (one study) or strong quality (20 studies), so none of them were excluded.

5.3. Descriptive synthesis: characteristics of included studies

Characteristics of each study included in this systematic review are described in detail in Table 3. All studies were published between 2009 and 2017 and more than a quarter (n = 10 studies) were published in 2015–16. The majority of studies were conducted in Canada (n = 9) and the United States (n = 6). Two studies were completed in each of India and South Africa and one in each of Iran and Belgium.

5.3.1. Participants

All study participants were registered healthcare professionals working in direct care roles or employed in management, administrative, supervisory, or leadership specific roles. Samples included: registered nurses in 13 studies; and mixed groups in seven studies (nurses and supervisors in three studies, nurses and physicians in one study; managers, specialists, administrative personnel, academic professionals in three; and chief nurse executives in one study). In relation to registered nurses and work experience, 10 studies included experienced nurses and four included new graduate nurses (less than 2 years of experience) specifically.

5.3.2. Settings

Studies were primarily conducted in acute care settings (n = 19), while one was conducted in hospitals and nursing homes and one was conducted in the private healthcare industry and did not specify level of care or settings.

5.3.3. Study designs

Studies were primarily non-experimental, correlational designs (n = 18, 86%); however, there were three time-lagged studies from three original datasets reported in six papers (Boamah et al., 2017; Laschinger et al., 2016; Laschinger and Fida, 2014a,b; Nelson et al., 2014; Read and Laschinger, 2015). One study examined authentic leadership and outcomes across patient care unit levels and thus used data aggregated to the unit level for authentic leadership and outcomes in the analysis (Johnson, 2015).

5.3.4. Theoretical/conceptual framework

All (n = 21) quantitative studies included Avolio et al.'s (2004) authentic leadership theory in addition to various other theories depending on study variables.

5.3.5. Measures of authentic leadership

Two instruments were used to assess authentic leadership in studies.

Table 3
Characteristics of Included Quantitative Studies.

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
1	Wong, C.A., & Cummings, G.G. (2009b). *Journal of Leadership Studies*, *3*(2), 6–23	To test a model linking authentic leadership behaviours with trust in management, perceptions of supportive groups and work outcomes.	Quantitative survey – secondary analysis	Random sample of two groups: (1) clinical group included responses from 147 registered nurses, pharmacists, physicians, radiation therapists and (2) nonclinical group included 188 administrative, research, support staff; randomly selected	Self-awareness, balanced information processing, authentic behaviour, and relational transparency: Leadership Practices Inventory (LPI; Kouzes and Posner, 2003)	NR/NR	Structural equation Modeling – multi-group
	Canada	Authentic leadership theory (Avolio et al., 2004)		Response rate = Not reported (NR)	**Mediating Factor(s):**		
				Final n = 335	Trust in management and supportive group: Areas of Worklife Scale (AWS; Leiter and Maslach, 2004)	NR/NR	Pearson correlations
					Outcome Factor(s):		
					Voice behaviour, self-rated performance, and burnout: Maslach Burnout Inventory General Survey (MBI-GS; Maslach et al., 1996)	NR/NR	
2a	Wong, C. A., Spence Laschinger, H. K., Cummings, G. G., (2010). *Journal of Nursing Management*, *18*(8), 889–900	To test a theoretical model linking authentic leadership with staff nurses' trust in their manager, work engagement, voice behaviour and perceived unit care quality	Non-experimental, predictive survey	600 registered randomly selected nurses working in acute care teaching and community hospitals in Ontario	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.97/CFA	Structural Equation Modelling
	Canada	Authentic leadership theory (Avolio et al., 2004)		Response rate: 48%	Mean = 2.35, SD = 0.99		
				Final n: 280	**Mediating Factor(s):**		Path Analysis Pearson Correlations
					Personal identification: Personal Identification Questionnaire (Kark et al., 2003	α = 0.95/CFA	
					Social identification: Social Identification Questionnaire (Kark et al., 2003)	α = 0.90/CFA	
					Trust: Trust in Management Scale (Mayer and Gavin, 2005)	α = 0.83/EFA	Reliability estimates
					Work engagement: Utrecht Work Engagement Scale (UWES) short version (Schaufeli and Bakker, 2003)	α = 0.90/CFA	
					Outcome Factor(s):		
					Voice behaviour: Helping and Voice Behaviours Scale (VanDyne and LePine, 1998)	α = 0.92	
					Perceptions of unit care quality: from Hospital Staffing and Organization of Patient Outcomes (Aiken et al., 2001)	NR/NR	
2b	Wong, C. A., & Laschinger, H. K. S. (2013). *Journal of Advanced Nursing*, *69*(4), 947–959	To test a model linking authentic leadership of managers with nurses' perceptions of structural empowerment, performance, and job satisfaction	Non-experimental, predictive survey	600 registered nurses (RNs) randomly selected working in acute care teaching and community hospitals in Ontario	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.97/CFA	Structural equation modelling
	Canada			Response rate: 48%	Mean = 2.35, SD = 0.98		

(*continued on next page*)

Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
		Authentic leadership theory (Avolio et al., 2004)					
				Final n: 280	**Mediating Factor(s):** Structural empowerment: Conditions of Work Effectiveness Questionnaire II (CWEQ-II) (Laschinger et al., 2001)	α = 0.88/CFA	Path analysis Pearson correlations
					Outcome Factor(s): Job satisfaction: Global Job Satisfaction Survey (Quinn and Shepard, 1974)	α = 0.95/ correlations	
					Performance: General Performance scale (Roe et al., 2000)	α = 0.81/ correlations	
2c	Bamford, M., Wong, C., & Laschinger, H. (2013). *Journal of Nursing Management, 21*(3), 529–540	To examine the relationships among nurses' perceptions of nurse managers' authentic leadership, nurses' overall person–job match in the six areas of worklife and their work engagement	Non-experimental, predictive survey design	A random sample of 600 nurses working in acute care hospitals in Ontario and employed in a direct-care nursing position	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.97/CFA	Hierarchical multiple regression and mediation analysis
	Canada	Six areas of worklife (Maslach and Leiter, 1997) and authentic leadership theory (Avolio et al., 2004)		Response rate = 48%	Mean = 2.35, SD = 0.99		
				Final = 280	**Mediating Factor(s):** Person–job match in the six areas of worklife: Areas of Worklife Scale (AWS) (Leiter and Maslach, 2002)	α = 0.89/ Criterion validity	Pearson correlations
					Outcome Factor(s): Work engagement: Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker, 2003)	α = 0.90/CFA	
2d	Wong, C. A., & Giallonardo, L. M. (2013). *Journal of Nursing Management, 21*(5), 740–752	To test a model examining relationships among authentic leadership, nurses' trust in their manager, areas of work life and nurse-assessed adverse patient outcomes	Secondary analysis of data collected in a cross-sectional survey	600 nurses randomly selected working in acute care hospitals across Ontario fulltime and part-time	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.97/CFA	Reliability estimates
	Canada	Authentic leadership theory (Walumbwa et al., 2008)		Response rate: 48%	Mean = 2.35, SD = 0.98		
				Final n: 280	**Mediating Factor(s):** Trust in manager: Trust in Management Scale (Mayer and Gavin, 2005)	α = 0.83/EFA	Pearson correlations
					Person–job match: Areas of Worklife Scale (AWS) (Leiter and Maslach, 2002)	α = 0.98/ correlations with other variables	Structural Equation Modelling
					Outcome Factor(s): Adverse patient outcomes: Adverse patient outcomes: American Nurses Association (ANA) Nursing Quality Indicators (Sochalski, 2001)	α = 0.81/ correlations with other variables	

(*continued on next page*)

Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
2e	Fillmore, K. (2013). (Master thesis, University of Western Ontario)	To examine the relationship among authentic leadership, structural empowerment, and nurses' trust in their manager in a sample of Ontario acute care nurses, and determine if structural empowerment mediates the relationship between authentic leadership and trust	Non-experimental, cross-sectional, predictive survey design	600 registered nurses randomly selected working full-time and part-time in direct care positions in acute care community and teaching hospitals in Ontario	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007; Walumbwa et al., 2008)	α = 0.97/CFA	Pearson correlations
	Canada	The authentic leadership model (Avolio et al., 2004)		Response rate = 48%	Mean = 2.35, SD = 0.99		
				Final = 280	**Mediating Factor(s):**	α = 0.97/CFA	Hierarchical multiple linear regression
				Demographics:	Structural empowerment: Conditions of Work Effectiveness Questionnaire II (CWEQ-II) (Laschinger et al., 2001)		
				Full-time nurses have lower levels of authentic leadership than part-time nurses	**Outcome Factor(s):**	α = 0.83/CFA	Mediation regression analysis
					Trust in manager: Trust in Manager Scale (Mayer and Gavin, 2005)		
3	Giallonardo, L., Wong, C., & Iwasiw, C. (2010). *Journal of Nursing Management*, *18*(8), 993–1003	To examine the relationships between new graduate nurses_ perceptions of preceptor authentic leadership, work engagement and job satisfaction	Non-experimental, predictive survey design	500 random sample of new graduate nurses working in acute care settings with < 3 years nursing experience	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.91/CFA	Pearson correlations, hierarchical multiple regression and mediation analysis
	Canada	Authentic leadership (Avolio et al., 2004) and concept of work engagement (Schaufeli and Bakker, 2004)		Response rate = 39%	Mean = 3.05, SD = 0.62		
				Final = 170	**Mediating Factor(s):**		
					Work engagement: Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker, 2003)	α = 0.86/CFA	
					Outcome Factor(s):		
					Job satisfaction: Index of Work Satisfaction scale (IWS) (Stamps, 1997)	α = 0.90/NR	
4a	Laschinger, H., Wong, C., & Grau, A. (2012). *International Journal of Nursing Studies*, *49*(10), 1266–1276	Test a model linking authentic leadership to new graduate nurses' experiences of workplace bullying and burnout, and subsequently, job satisfaction and intentions to leave their jobs	Cross-sectional survey design	Random sample of 907 newly graduated nurses with less than two years of experience in acute care hospitals across Ontario	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.95	Structural equation modelling (SEM)
	Canada	Authentic leadership (Avolio et al., 2004), notion of workplace bullying (Einarsen et al., 1998), and burnout model (Leiter and Maslach, 2004)		Response rate = 38%	Mean = 2.47, SD = 0.85		
				Final n = 342	**Mediating Factor(s):**		

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Workplace bulling: Negative Acts Questionnaire-Revised (Einarsen and Hoel, 2001)	α = 0.92	Pearson correlations
					Outcome Factor(s):		
					Burnout: Emotional exhaustion subscale of Maslach Burnout Inventory-General Survey (MBI-GS) (Schaufeli et al., 1996)	α = 0.92/CFA	Reliability Assessments
					Job satisfaction: Job Satisfaction Scale (Hackman and Oldham, 1975)	α = 0.80/ correlations	
					Turnover intentions: Turnover Intentions Scale (Kelloway et al., 1999)	α = 0.87/ correlations	
4b & 2a	Laschinger, H., Wong, C. & Grau, A. (2013). *The Journal of Nursing Management*, *21*(3), 541–552	To examine the effect of authentic leadership and structural empowerment on the emotional exhaustion and cynicism of new graduates and experienced acute-care nurses	Secondary analysis of data from two studies	Random sample of 907 new graduate nurses with < 2 years of practice experience and 600 nurses with more than 2years experience	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = EN:0.97	Structural equation modelling (SEM)
	Canada	Empowerment theory (Kanter, 1977), AL theory (Avolio et al., 2009), and burnout theory (Leiter and Maslach, 2004)		Response rate: 37.7% for new graduate (NG) and 48% for the experienced nurses (EN)	Mean = 2.37, SD = 0.98	NG: 0.95/CFA	
				Final n: 342 NG and 273 EN	**Mediating Factor(s):**		Pearson correlations
					Structural empowerment: The Conditions of Work Effectiveness Questionnaire-II (CWEQ-II) (Laschinger et al., 2001)	α = EN:0.84 NG: 0.83/CFA	
					Outcome Factor(s):		
					Emotional exhaustion and cynicism: Emotional exhaustion and cynicism subscales of Maslach Burnout Inventory–General Survey (Schaufeli et al., 1996)	α = EN:0.93; 0.89 NG: 0.92; 0.85/ NR	
4c	Read, E., & Laschinger, H. K. (2013). *The Journal of Nursing Administration*, *43*(4), 221–228	To explore correlates of new graduate nurses' experiences of workplace mistreatment	Secondary data analysis of cross-sectional survey	907 RNs newly registered randomly selected with the College of Nurses of Ontario within the last 2 years	Authentic Leadership Questionnaire (Walumbwa et al., 2008)	α = 0.94/NR	Pearson correlations
	Canada			Response rate: 48% Final n: 342	Mean = 2.47, SD = 0.86 **Workplace mistreatment:**		
					Incivility: Workplace Incivility Scale (Cortina et al., 2001)	α = 0.89/NR	
					Bullying: Negative Acts Questionnaire (Einarsen et al., 2009)	α = 0.90/NR	
4d	Laschinger, H. & Smith, L. (2013). *The Journal of Nursing Administration*, *43*(1), 24–29		Correlational survey design	342 new graduates randomly selected from the College of Nurses of Ontario registry list with less than 2 years' experience	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.96/CFA	Hierarchical multiple linear regression

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
		To examine new-graduate nurses' perceptions of the influence of authentic leadership and structural empowerment on the quality of interprofessional collaboration in healthcare work environments					
	Canada	Authentic leadership theory (Avolio et al., 2004) and workplace empowerment		Response rate: NR	Mean = 2.35, SD = 1.00		
		Theory (Kanter, 1977)		Final n: 194	Structural empowerment: Conditions of Work Effectiveness Questionnaire-II. (Laschinger et al., 2001)	α = 0.84/CFA	
					Outcome Factor(s): Interprofessional collaboration: Researcher-constructed Interprofessional Collaboration Scale (; Kenaszchuk et al., 2010; Orchard et al., 2005)	α = 0.75/NR	
5a	Laschinger, H. & Fida, R. (2014a). *European Journal of Work and Organizational Psychology*, *23*(5), 739–753	To examine: 1) The relationship between authentic leadership and new graduate nurses experiences of workplace bullying, burnout and job and career turnover intentions over a 1-year timeframe in Canadian healthcare settings.	Two-wave study utilized questionnaire data gathered in 2010 (Time 1) and 2011 (Time 2)	Random ssmple of 907 new graduated nurses randomly selected with less than 2 years of experience in acute care hospitals in Ontario, Canada	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.94/NR	Structural equation models (SEM)
	Canada	Authentic leadership theory (Avolio et al., 2004)		Response rate: Time 1 = 37.7%, Time 2 = 59.9%	Mean = 2.49, SD = 0.88		
				Final n: T1 = 342, T2 = 205	**Mediating Factor(s):**		Pearson correlations
					Work-related bullying: Negative Acts Questionnaire (NAQ-R; Einarsen and Hoel, 2001)	α = 0.80/NR	
					The emotional exhaustion and cynicism: Emotional exhaustion and cynicism subscals of Maslach Burnout Inventory–General Survey (MBIGS; Schaufeli et al., 1996)	α = 0.92–0.85/ NR	
					Outcome Factor(s): Job & career turnover: Job & Career Turnover Intentions Scale (Kelloway et al., 1999)	α = 0.88/NR α = 0.82/NR	
5b	Laschinger, H. K., & Fida, R. (2014b). *Burnout Research*, *1*(1), 19–28		Ttwo-wave survey (Time 1 in 2010; Time 2 in 2011)	Random sample of 907 newly graduated nurses with less than two years of experience in acute care hospitals in across Ontario	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.94/CFA	Conditional latent growth model (LGM) with two time points

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
		To investigate 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					
	Canada	Authentic leadership (Avolio and Gardner, 2005)		Response rate: Time 1 = 37.7%, Time 2 = 59.9%	Mean = 2.49, SD = 0.88		
				Final n: T1 = 342, T2 = 205	Psychological capital: Psychological Capital Questionnaire (Luthans et al., 2007)	α = 0.90/CFA	Pearson correlations
					Mediating Factor(s):		
					Emotional exhaustion and cynicism: Emotional exhaustion and cynicism subscales of Maslach Burnout Inventory-General Survey (MBI-GS) (Schaufeli et al., 1996)	α = 0.92–0.84/ CFA	
					Outcome Factor(s):		
					Work and career satisfaction: Work and career satisfaction (Shaver and Lacey, 2003)	α = 0.85/ correlations	
					Mental health: Mental Health Index (MHI-5) (Ware and Sherbourne, 1992)	α = 0.82/ correlations	
5c	Read, E. & Laschinger, H. (2015). *Journal of Advanced Nursing, 71*(7), 1611–1623	To examine a theoretical model testing the effects of authentic leadership, structural empowerment and relational social capital on the mental health and job satisfaction of new graduate nurses over the first year of practice	Longitudinal survey design	Random sample of 907 new graduate nurses in Ontario with < 2 years of experience	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.95	Structural equation modelling
	Canada	Structural empowerment (Kanter, 1977; Kanter, 1993), authentic leadership theory (Avolio and Gardner, 2005), and social capital theory (Nahapiet and Ghoshal, 1998)		Response rate: Time 1 = 48.2%, Time 2 = 55.8%	Mean = 2.47, SD = 0.88		
				Final n: T1 = 342, T2 = 191	**Mediating Factor(s):**		Pearson correlations
					Structural empowerment: Conditions of Work Effectiveness Questionnaire II (CWEQ-II) (Laschinger et al., 2001)	α = 0.80/CFA	Path Analysis
					Outcome Factor(s):		
					Relational social capital: Areas of Worklife Scale (AWS) (Leiter and Maslach, 2002)	α = 0.81/CFA	
						α = 0.86/NR	

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Mental health symptoms: Mental Health Inventory (MHI-5) (Ware and Kosinski, 2000)		
					Job satisfaction: Job satisfaction scale (Shaver and Lacey, 2003)	α = 0.82/NR	
5d	Regan, S., Laschinger, H. K. S., & Wong, C. A. (2016). *Journal of Nursing Management*, *24*(1), 54–61	To examine the influence of structural empowerment, authentic leadership and professional nursing practice environments on experienced nurses' perceptions of interprofessional collaboration	Predictive non-experimental design	2012 experienced registered nurses (those with greater than 5 years' experience)	Structural empowerment: Conditions of Work Effectiveness Questionnaire – II (CWQ-II) (Laschinger et al., 2001)	α = 0.85/CFA	Hierarchical multiple linear regression analyses
	Canada	Structural empowerment (Kanter, 1977; Laschinger and Havens, 1996) and authentic leadership (Avolio et al., 2004),		Response rate: 13%	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.97/CFA	Pearson Correlations
				Final n: 220	Mean = 2.28, SD = 1.04		
					Professional nursing practice environment: Nursing Work Index-Revised (NWI-R) (Aiken and Patrician, 2000)	α = 0.82/ correlations with other variables	
					Outcome Factor(s):		
					Interprofessional collaboration: Interprofessional Collaboration Scale (IPCS) (Laschinger and Smith, 2013)	α = 0.90/ correlations	
5e	Laschinger, H., & Fida, R. (2015). *Journal of Nursing Administration*, *45*(5), 276–283	A model linking authentic leadership, structural empowerment, and supportive professional practice environments to nurses' perceptions of patient care quality and job satisfaction was tested	Cross-sectional provincial survey	Random sample of 723 nurses working in direct patient care settings	Authentic leadership: Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.97/CFA	Structural equation modelling
	Canada	AL theory (Avolio et al., 2004) and structural empowerment theory (Kanter, 1977; Kanter, 1993)		Response rate: NR	Mean = 2.29, SD = 1.05		
				Final n: 723	**Mediating Factor(s):**		Pearson correlations
					Structural empowerment: Conditions of Work Effectiveness-II (CWEQ-II) (Kanter, 1977)	α = 0.86/CFA	
					Outcome Factor(s):		
					Supportive practice environments and adequate staffing: Nursing Work Index-Revised (NWI-R) (Aiken and Patrician, 2000)	α = 0.80/ correlations	
					Quality of care: Nurse-assessed patient care quality was measured using a single item How would you describe quality of nursing care delivered on your unit?	NR	

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Job satisfaction: Job satisfaction scale (Cammann et al., 1983)	α = 0.77/ correlations	
5f	Fallatah, F. & Spence Laschinger. H., (2016). *Journal of Research in Nursing*, *21*(2), 125–136	To test a theoretical model linking authentic leadership to new graduate nurses' job satisfaction through its effect on supportive professional practice environments	Secondary analysis of two wave study over one year period	93 new graduate nurses randomly drawn from the registry list of the College of Nursing in Ontario; working in acute care settings and with less than two years of experience	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.92/CFA	Mediation analysis of Baron and Kenny (1986).
	Canada	Authentic leadership theory (Avolio et al., 2004)		Response rate: NR	Mean = 2.31, SD = 0.79		
				Final n: 93	**Mediating Factor(s):**		Hierarchical multiple linear regression
					Supportive professional practice environments: Nursing Worklife Index (NWI-R) (Aiken and Patrician, 2000)	α = 0.79/ correlations	
					Outcome Factor(s):		Pearson correlations
					New graduate nurses' job satisfaction: North Carolina Center for Nursing – Survey of Newly Licensed Nurses (Scott et al., 2008)	α = 0.79/ correlations	
6a	Laschinger, H. K. S., Cummings, G., Leiter, M., Wong, C., MacPhee, M., Ritchie, J., ... & Young-Ritchie, C. (2016). *International Journal of Nursing Studies*, *57*(5), 82–95	To investigate factors influencing new graduate nurses' successful transition to their full professional role in Canadian hospital settings and to determine predictors of job and career satisfaction and turnover intentions	Time-lagged over one year period	Random sample of 3906 registered nurses with less than 3 years of experience currently working in direct patient care	**Time 1:**		Paired *t*-tests
	Canada	Organizational socialization model (Scott et al., 2008)		Response rate: Time 1 = 27.3%	Authentic Leadership Questionnaire (Walumbwa et al., 2008)	α = 0.96/CFA	Pearson correlations
				Time 2 = 39.8%	Mean: T1 = 2.64, T2 = 2.51		
				Final n: 403	SD: TI = 0.87, T2 = 0.90		
					Outcome Factor(s):		Hierarchical multiple linear regression
					Time 2:		
					Job satisfaction: Job satisfaction scale (Cammann et al., 1983)	α = 0.88/ previous studies	
					Job turnover intentions: Job turnover intentions scale (Kelloway et al., 1999)	α = 0.88/ previous studies	
					Career satisfaction: Career satisfaction scale (Shaver and Lacey, 2003)	α = 0.77/ previous studies	
					Career turnover intentions: Career turnover intentions scale (Kelloway et al., 1999)	α = 0.75/ previous studies	
6b	Laschinger, H, Borgogni, L., Consiglio, C. & Read, E., (2015). *International Journal of Nursing Studies*, *52*(6), 1080–1089	To test a model linking authentic leadership, areas of worklife, occupational coping self-efficacy, burnout, and mental health among new graduate nurses	Cross-sectional national survey	3743 new graduate nurses randomly selected with less than 3 years of nursing experience working in direct patient care settings from across Canada	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.96/CFA	Structural equation modelling (SEM)

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
	Canada	Authentic leadership (Avolio and Gardner, 2005)		Response rate: 27%	Mean = 2.60, SD = 0.87		
				Final n: 1009	**Mediating Factor(s):**		Pearson correlations
					Areas of worklife: Areas of Worklife Scale (Leiter and Maslach, 2011)	α = 0.81/CFA	
					Outcome Factor(s):		
					Occupational coping self-efficacy: Occupational Coping Self-Efficacy Scale (Pisanti et al., 2008)	α = 0.83/CFA	
					Burnout: Burnout Inventory-General Survey (Borgogni et al., 2012)	α = 0.82–0.92/ CFA	
					Mental health: General Health Questionnaire (Goldberg and Williams, 1988)	α = 0.85/ previous studies	
6c	Laschinger, H. K. S., & Read, E. A. (2016). *Journal of Nursing Administration*, *46*(11), 574–580	To examine influence of authentic leadership, person-job fit with 6 areas of worklife, and civility norms on coworker incivility and burnout among new graduate nurses	Cross-sectional survey	Random sample of 3906 new graduate from the nursing registry bodies of 10 Canadian provinces	Authentic Leadership Questionnaire (Walumbwa et al., 2008)	α = 0.96/CFA	Structural equation modelling (SEM)
	Canada	Authentic leadership theory (Avolio and Gardner, 2005)		Response rate = 27.3%	Mean = 2.61, SD = 0.87		
				Final = 1020	**Mediating Factor(s):**		Correlation analysis
					Areas of worklife: Areas of Worklife Scale (Leiter and Maslach, 2002)	α = 0.77/CFA	
					Outcome Factor(s):		
					Civility norms: Civility Norms Questionnaire (Walsh et al., 2012)	α = 0.89/CFA	
					Co-worker incivility: Straightforward Workplace Incivility Scale, (Leiter and Day, 2013)	α = 0.93/ CFA	
					Emotional exhaustion: Maslach Burnout Inventory (MBI), Emotional Exhaustion Subscale (Schaufeli et al., 1996)	α = 0.92/CFA	
6d	Boamah, S. A., Read, E. A., & Spence Laschinger, H. K. (2017). *Journal of Advanced Nursing*, *73*(5), 1182–1195	To test a hypothesized model linking new graduate nurses' perceptions of their manager's authentic leadership behaviours to structural empowerment, short-staffing and work–life interference and subsequent burnout, job satisfaction and patient care quality	Time-lagged study over one year period	Random sample of 3743 registered nurses with less than 3 years of nursing work experience selected from the nursing registry database of each of the 10 Canadian provinces	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.93/CFA	Structural equation modelling
	Canada	Authentic leadership theory (Avolio and Gardner, 2005), structural empowerment (Kanter, 1977), and burnout theory (Maslach and Leiter, 1997)		Response rate = Time 1 = 27.3%	Mean = 2.64, SD = 0.86		
				Time 2 = 39.8%	**Mediating Factor(s):**		

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
							Pearson correlation
				Final = 406	Structural empowerment: Conditions of Work Effectiveness-II (CWEQ-II) (Laschinger et al., 2001)	α = 0.85/CFA	
					Outcome Factor(s):		
					Work-life interference: Work Interference with Personal Life (WIPL) (Fisher-McAuley et al., 2003)	α = 0.85/NR	
					Short-staffing: A single-item how often working short-staffed affects nurses' ability to provide quality patient care (Pineau Stam et al., 2015)	NR	
					Burnout: Maslach Burnout Inventory General Survey (MBI-GS) (Schaufeli et al., 1996)	α = 0.81–0.92/ CFA	
					Job satisfaction: Michigan Assessment of Organizations Questionnaire (Cammann et al., 1983)	α = 0.86/NR	
					Nurse-assessed quality of care: Nurse-assessed quality of care: (Aiken and Patrician, 2000)	NR	
6e	Fallatah, F, Laschinger, H, & Read, E, (2017). *Nursing Outlook*, *65*(2), 172–183	To examine influence of authentic leadership on new nurses' job turnover intentions through new graduate nurses' personal identification with their leader, organizational identification, and occupational coping self-efficacy	Cross-sectional design	Random sample of 3906 new graduate nurses with less than three years of experience and acute care and community settings	Authentic Leadership Questionnaire (Walumbwa et al., 2008)	α = 0.93/ previous studies	Pearson correlations
	Canada	Authentic leadership theory (Avolio et al., 2004)		Response rate: NR	Mean = 2.60, SD = 0.87		
				Final n: 998	**Mediating Factor(s):**		Structural equation modelling (SEM)
					Personal identification: Relational Identification Scale (Sluss et al., 2012)	α = 0.89	
					Outcome Factor(s):		
					Organizational identification: The Organizational Identification Scale (Sluss et al., 2012)	α = 0.87/ previous studies	
					Occupational coping self-efficacy: The Occupational Coping Self-Efficacy Questionnaire (Pisanti et al., 2008)	α = 0.82/ Previous studies	
					Turnover intention: Turnover Intention Scale (Kelloway et al., 1999)	α = 0.87/ previous studies	
7			Non-experimental time-lagged design	Random sample of 7997 nurses	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.82–0.95/ CFA	Correlational analyses

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
	Nelson, K., Boudrias, J., Brunet, L., Morin, D., Civita, M., Savoie, A., and Alderson, M. (2014). *Burnout Research*, *1*(2), 90–101	To examine link between authentic leadership and psychological well-being by considering the mediational effect of work climate					
	Canada	Psychological well-being (Gilbert et al., 2011) and authentic leadership theory (Avolio and Gardner, 2005)		Response rate: Time 1 = 10.7%, Time 2 = 71.8%	Mean = 3.49, SD = 0.90		
				Final n: T1 = 859, T2 = 608 of T1	**Mediating Factor(s)**		Multiple linear regression analyses
				Demographics:	Work climate: Work Climate Scale (Roy, 1989)	α = 0.97/CFA	
				Education and frequency of contact with supervisor positively associated with AL	**Outcome Factor(s):**		Mediation assessed using ordinary least squares path analysis with the PROCESS macro developed by Hayes (2013) in SPSS 21.0
					Psychological well-being at work: Psychological Well-Being Scale (Gilbert et al., 2011	α = 0.95/EFA	
8	Rahimnia, F., & Sharifirad, M. S. (2015). *Journal of Business Ethics*, *132*(2), 363–377	To investigate relationship between authentic leadership and the three dimensions of employee well-being (job satisfaction, perceived work stress, and stress symptoms) and attachment insecurity	Non-experimental, predictive survey design	352 healthcare providers with patient contact- 5 hospitals/ randomly selected (nurses = 67.2%; MDs = 32.8%)	Authentic Leadership Inventory (ALI) (Neider and Schriesheim, 2011)	α = 0.91/CFA	Confirmatory Factor Analysis
	Iran	Authentic Leadership (Avolio and Gardner, 2005)		Response rate: 60.2%	Mean = 3.11, SD = 0.57		
				Final n: 212	**Mediating Factor(s):**		Structural equation modelling
					Attachment insecurity: Close Relationships Inventory Scale (Brennan et al., 1998)	α = 0.88/CFA	
					Outcome Factor(s):		Pearson correlations
					Job satisfaction: Job satisfaction scale (Cammann et al., 1983)	α = 0.84/NR	
					Perceived work stress: Perceived work stress (Siu et al., 2007, 2006)	α = 0.87/NR	
					Stress symptoms: Organizational Stress Screening Tool (Cartwright and Cooper, 2002)	α = 0.92/NR	
9a	Stander, F. W., De Beer, L. T., & Stander, M. W. (2015). *Journal of Human Resource Management*, *13*(1), 12-pages	To determine whether AL predicts optimism, trust in the organization and work engagement and to establish whether optimism and trust in the organization mediates relationship between AL and work engagement	Cross-sectional survey research design	633 public health employees from 27 hospitals and clinics and who work in various functions (management = 7.4%; administration = 19.6%; specialist = 12%; other = 50.9%)/convenience sampling selected	Authentic Leadership Inventory (ALI) (Neider and Schriesheim, 2011)	α = 0.93/CFA	Structural equation modelling

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
	South African	Authentic leadership theory (Walumbwa et al., 2008)		Response rate: NR	Mean = NR, SD = NR		
				Final n: 633	Job resources of relationship with colleagues and communication: VBBA (Van Veldhoven et al., 1997)	α = 0.83–0.84/ CFA	Confirmatory factor analysis
					Mediating Factor(s):		Correlation analyses
					Optimism: PsyCap Questionnaire (Luthans et al., 2007)	α = 0.74/CFA	
					Trust in the organization: Workplace Trust Survey (WTS; Ferres and Travaglione, 2003)	α = 0.88/CFA	
					Outcome Factor(s):		
					Work engagement: Utrecht Work Engagement Scale (Schaufeli and Bakker, 2003)	α = 0.90/CFA	
9b	Coxen, L., van der Vaart, L., & Stander, M. W. (2016). *SA Journal of Industrial Psychology*, *42*(1), 13-pages	To investigate the influence of authentic leadership on organizational citizenship behavioor, through workplace trust	Quantitative cross-sectional survey	633 employees working in the public healthcare sector – 27 hospitals and clinics and who work in various functions (management = 7.4%; administration = 19.6%; specialist = 12%; other = 50.9%)/(convenience sampling)	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.92/CFA	Structural equation modelling (SEM)
	South Africa	Authentic leadership theory (Walumbwa et al., 2008)		Response rate = NR	Mean: 3.37, SD: 0.9		
				Final n = 633	**Mediating Factor(s):**		Pearson correlations
					Trust in the organization, trust in the immediate supervisor, and trust in co-worker: Workplace Trust Survey (WTS) (Ferres and Travaglione, 2003)	α = 0.87/CFA	Confirmatory factor analyses (CFA)
					Outcome Factor(s):		
					Organizational citizenship behaviour (organization and co-worker): Organizational Citizenship Behavior Scale (OCBS) (Rothmann, 2010)	α = 0.73/CFA	
10	Malik, N., Dhar, R. & Handa, S. (2016). *International Journal of Nursing Studies*, *63*(11), 28–36	To examine the relationship between AL and employee creativity, while determining the mediating effect of knowledge sharing behaviour and moderating effect of use of information technology on this association	Cross-sectional survey	620 nurses and their supervisors for hospitals and nursing homes/ convenience samplingence	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.97/CFA	Confirmatory factor analyses (CFA)
	India	Authentic leadership (Walumbwa et al., 2008) and employee creativity (Amabile, 1988; Oldham and Cummings, 1996)		Response rate: 65.32%	Mean = 1.875, SD = 1.12		
				Final n: 405 nurses and 81 supervisors = 405 nurse-supervisor dyads	**Mediating Factor(s):**		Pearson correlations

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Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Knowledge sharing behaviour: Knowledge sharing behaviour sale (Lu et al., 2006)	α = 0.96/CFA	
					Moderating Factor(s):		Path analysis using SPSS macro named PROCESS (Hayes, 2013)
					Use of information technology: Use of information technology scale (Saga and Zmud, 1993)	α = 0.93/CFA	
					Outcome Factor(s):		
					Employee creativity: Employee creativity scale (Oldham and Cummings, 1996)	α = 0.84/CFA	
11	Mortier, A.V., Vlerick, P. & Clays. E. (2016). *Journal of Nursing Management*, *24*(3), 357–365	To examine relationship between authentic leadership and two dimensions of thriving (learning and vitality) among nurses, and to study the mediating role of empathy in this relationship	Cross-sectional design	950 nurses in large hospital approached for study/ convenience sample	Authentic Leadership Inventory (ALI) (Neider and Schriesheim, 2011)	α = 0.93/NR	Hierarchical multiple linear regression analyses
	Belgium	Authentic leadership theory (Avolio and Gardner, 2005)		Response rate: 37.9%	Mean = 53.40, SD = 10.58		
				Final n: 360	**Mediating Factor(s):**		3-step procedure of Baron and Kenny (1986) & Sobel test for mediation
					Empathy: Empathy scale (Wong and Law, 2002)	α = 0.87/NR	
					Outcome Factor(s):		Correlational analyses
					Thriving: Thriving scale (Porath et al., 2012)	α = 0.80–0.86/ NR	
12	Malik, N., & Dhar, R. L. (2017). *Personnel Review*, *46*(2), 277–296	To examine the relationship between authentic leadership and employee extra role behaviour (ERB) while determining the mediating effect of psychological capital (PC) and moderating effect of autonomy on that relationship	Quantitative, descriptive, correlation design	900 questionnaires were distributed among nurses and an equal number among 163 supervisors in hospitals – convenience sample	Authentic Leadership Questionnaire (Avolio and Chan, 2008)	α = 0.98/CFA	Path analysis employing SPSS macro named PROCESS (Hayes, 2013)
	India	Authentic leadership (Luthans et al., 2007) and employee extra role behaviouir (Clapp-Smith et al., 2009; Moriano et al., 2011)		Response rate for nurses = 57.77 and for supervisors = 63.66	Mean = 2.316, SD = 1.39		
				Final n = 520 nurses and their 163 supervisors	**Mediating Factor(s):**		
					Psychological capital: Psychological Capital Scale (Luthans et al., 2007)	α = 0.98/CFA	
					Moderating Factor(s):		Confirmatory factor analysis (CFA)
					Autonomy: Autonomy scale (Park and Searcy, 2012)	α = 0.94/CFA	
					Outcome Factor(s):		Sobel test for mediation
						α = 0.97/CFA	

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Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Extra Role Behavior: Extra Role Behavior scale (Eisenberger et al., 2010)		
Unpublished Dissertations & Theses							
13	Anderson, T. L. K. (2011). (Doctoral dissertation, College of Saint Mary)	To examine the perceived levels of transformational and authentic leadership among chief nurse executives (CNEs) of acute care U.S. hospitals	Quantitative, descriptive, correlation design/web-based survey	184 CNEs speaking English, working within United States acute care hospitals; convenience sampling	Transformational leadership: Multifactorial Leadership Questionnaire (MLQ) (Avolio and Bass, 2004)	α = 0.56–0.72/ NR	Frequency distributions Spearman rho correlations
	U.S	Anderson Predicted Nurse Executive Leadership Conceptual Model developed for study		Response rate = NR	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.43–0.77/ NR	Mann-Whitney *U*-tests
				Final = 144 used in analysis	Mean = 3.36–3.80, SD = 0.30–0.48 (subscales)		Chi square
				Demographics:	**Outcome Factor(s):**		Pearson correlations
				AL positively correlated with age, and tenure in executive nursing roles, but not level of education	Organizational context (Nursing Professional Practice Culture, NPPC): Nursing Professional Practice Culture scale (ANCC, 2008)	α = 0.66/NR	
14	Stearns, M. (2012). (Doctoral dissertation, Grand Canyon University)	To investigate whether there was a relationship between the authentic leadership behaviours of nurse managers and staff RN job satisfaction and retention	Descriptive correlational design	355 staff RNs and 29 nurse managers working on medical-surgical units at the study hospitals participated in the study- purposive sampling	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.96/ previous studies	Correlational analysis
	U.S	Avolio et al. (2004) model of authentic leadership		Response rate: 43.2%	Mean = 3.22, SD = 0.25		
				Final = 139 staff RNs and 29 nurse managers	**Mediating Factor(s):** NR		Regression analysis
					Outcome Factor(s): Job satisfaction: Satisfaction Scale (MMSS) (Mueller and McCloskey, 1990)	α = 0.94/ previous studies	
					Unit level retention data (n = 9 sample size too small to utilize)		
15	Yemi-Sofumade, H. B. (2012). (Doctoral dissertation, Capella University)	To determine whether the perceived ethical and authentic leadership characteristics of the frontline nurse leaders may be related to the turnover intentions of subordinate staff nurses	Quantitative survey	350 nurses randomly selected who were members of the ANA (American Nurses Association) in the Southeastern region of the U.S	Ethical leadership: Ethical Leadership Scale (ELS) (Brown et al., 2005)	α = 0.95/ Exploratory Factor Analysis	Linear regression
	U.S	Ethical leadership (Brown et al., 2005) and AL (Walumbwa et al., 2008)		Response rate: 40.9%	**Moderating Factor(s):**		Pearson correlations
				Final = 116	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008) Mean = NR, SD = NR	α = 0.97/CFA	
					Outcome Factor(s): Turnover intentions: Turnover Intentions Questionnaire (TIQ) (Jackofsky and Slocum, 1987)	α = 0.71/NR	

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Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
16	Haddad, L. M. (2013). (Doctoral dissertation, University of Tennessee)	To examine generational differences among acute care nurses on empowerment, professional practice, authentic leadership, incivility, job satisfaction, engagement and intent to leave the current job	A cross-sectional, randomized non-experimental design	1500 surveys were sent out to registered nurses in acute care across state Response rate = 16.9%	Generational differences: participants were asked about birth; generational cohorts were divided into the following groups: Baby Boomers, birth years 1943–1960, Generation X'ers, birth years 1961–1980, Generation Y's, birth year 1981 or after	NR/NR	General linear model (GLM) Pearson correlations
	U.S	Theory of Structural Power in Organizations (Kanter, 1977) and Generational Theory (Strauss and Howe, 1991)		Final = 75 participants in each of the three generational groups for a final sample of 210 RNs; systematic random sampling (every 10th nurse in registry)	Empowerment: Conditions of Work Effectiveness Questionnaire II (CWEQ-II) (Laschinger et al., 2001)	α = 0.83/CFA	Structural Equation Modeling (SEM) with Proc CALIS in SAS
					Mediating Factor(s):		
					Professional practice environment: Nursing Work Index (NWI-PES) (Lake, 2002)	α = 0.94/CFA	
					Incivility: Workplace Incivility Scale (WIS) (Cortina et al., 2001)	α = 0.93/NR	
					Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.98/ NR	
					Outcome Factor(s):		
					Job satisfaction: Job Diagnostic Survey (Hackman and Oldham, 1975)	α = 0.91/NR	
					Work engagement: Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002)	α = 0.91/NR	
					Intent to leave: Turnover Intentions Scale (Kelloway et al., 1999)	α = 0.81/NR	
17	Du Plessis, M. (2014). (Doctoral dissertation, University of the Western Cape)	To test a theoretical model of the relationships between authentic leadership, psychological capital, followership, and work engagement	Quantitative, cross-sectional online survey design	855 academic professionals and managers in a national South African private healthcare industry organization; purposive sampling	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.95/CFA	Confirmatory and exploratory factor analyses
	South Africa	Work Engagement (Bakker and Demerouti, 2007), Psychological Capital (Luthans et al., 2007), Followership (Kelley, 2008), AL (Avolio and Gardner, 2005)		Response rate = 76%	Mean = 2.80, SD = 0.84		
				Final = 647 **Demographics:** Higher AL perceived in male leaders	**Mediating Factor(s):** Psychological capital: Psychological Capital Questionnaire (PCQ) (Avolio et al., 2007) Followership: Followership scale (Kelley, 1992) **Outcome Factor(s):**	α = 0.89/CFA α = 0.79/CFA	Multiple liner regression analysis and ANOVA Structural equation modelling Baron and Kenny (1986) mediation analysis & Sobel test or mediation
					Work engagement: Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker, 2003)	α = 0.92/CFA	

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Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
18	Bennett, K. (2015). (Master's Thesis, University of Manitoba)	To use the Organizational Framework for Predicting Nurse Retention to explore the relationship between workplace bullying, job satisfaction, and authentic leadership among medical-surgical nurses	Descriptive correlational cross-sectional survey	317 medical-surgical nurses working in the province of Manitoba; convenience sampling (2061) invited to participate	Organizational climate: Perceived Nurse Working Environment (PNWE) (NWI-R; Aiken and Patrician, 2000)	α = NR/ Previous studies	Bivariate tests
	Canada	Organizational Framework for Predicting Nurse Retention (OFNPR) by Sawatzky and Enns (2012)		Response rate = NR	Control and autonomy: McCloskey Mueller Satisfaction Scale (MMSS; Mueller and McCloskey, 1990)	NR/NR	Multivariate ordinal regression analysis
				Final = 317	Bullying: Negative Acts Questionnaire-Revised (NAQ-R) (Notelaers and Einarsen, 2012)	NR/Previous studies	Kruskal-Wallis test Spearman-rho correlations
				Demographics:	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	NR/Previous studies	
				Nurses' age negatively correlated with AL of manager	Mean = 2.34, SD = 16.28		
					Outcome Factor(s): Job satisfaction: Job satisfaction scle (Lu et al., 2012; Sawatzky and Enns, 2012)	NR/NR	
19	Johnson, S. H. (2015). (Doctoral dissertation, Boston College)	To examine the influence of unit-level authentic leadership and structural empowerment on staff nurse decisional involvement and patient quality outcomes	A cross-sectional, web-based, survey	1669 staff nurses working in on general care units in the 11 acute-care hospital settings/ convenience sampling – unit level data (n = 105 units)	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.97/CFA	Correlational analysis
	U.S	Donabedian theory of quality healthcare and its three mechanisms for assessing quality, namely structure, process, and outcome (Donabedian, 1966)		Response rate = 39%	Mean = 2.92, SD = 0.93		
				Final = 1669 from 105 units	Structural empowerment: Conditions of Work Effectiveness Questionnaire-II (CWEQ-II) (Laschinger et al., 2001)	α = 0.86/CFA	Multiple regression using linear mixed effect models
				Demographics: AL positively associated with level of education	**Outcome Factor(s):** Staff nurse decisional involvement: Decisional Involvement Scale (DIS) (Havens and Vasey, 2005)	α = 0.92–0.94/ NR	
					Patient quality outcome: Patient satisfaction measure (Hospital Consumer Assessment of Healthcare Providers and Systems [HCAHPS], 2013	NR/NR	
						NR/NR	

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Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Hospital acquired conditions measure included falls with injury and pressure ulcers, which were collected with standardized NDNQI definitions and measures were mined from organizational databases		
20	Plasse, M. J. (2015). (Doctoral dissertation, Northeastern University)	To explore the congruence between nurse director's self-evaluation of authentic leadership style and staff nurses' evaluation of leadership style and identify if leadership style impact on psychological safety was mediated by peer-to peer relationship quality	Cross-sectional online survey	2210 staff nurses and nurse working in general medical and surgical units within an acute care hospital setting; convenience sampling	Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007)	α = 0.98/CFA	Pearson correlations
	U.S	Authentic leadership model (Avolio et al., 2004)		Response rate:	Mean = 4.30 for staff and 3.59 for directors		
				nurse directors = 55%	SD = 1.10 for staff and 0.26 for directors		
				staff nurses = 21%	**Mediating Factor(s):**		Intra-class correlation coefficients (ICC)
				Final = 455 staff nurses and 17 directors	Relational quality: High-Quality Relationship Tool (Dutton and Ragins, 2007)	α = 0.93/NR	
					Workplace incivility: Workplace Incivility Scale (WIS) (Cortina et al., 2001)	α = 0.90/NR	Structural Equation modelling – Path and mediation analysis using Mplus
					Outcome Factor(s):		
					Psychological safety: Psychological Safety scale (Edmondson, 1999)	α = 0.74/NR	
21	Read, E. A. (2016). (Doctoral dissertation, University of Western Ontario)	To develop and test a self-report questionnaire to measure nurses' workplace social capital and examine the nomologicial network of the concept including authentic leadership and structural empowerment as precursors of social capital and team effectiveness and patient care quality as outcomes	Cross-sectional survey (online)	1000 nurses randomly selected working in teaching or non-teaching hospitals in direct care staff nurse	Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008)	α = 0.97/CFA	Pearson correlations
	Canada	Nahapiet and Ghoshal's (1998) theory of social capital within organizations		Response rate: 25.3%	Mean = 2.41, SD = 0.99		
				Final = 247	**Mediating Factor(s):**		Structural equation modelling
					Structural empowerment: Conditions of Work Effectiveness Questionnaire II (CWEQ-II) (Laschinger et al., 2001)	α = 0.84/CFA	Confirmatory Factor analysis

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Table 3 (*continued*)

Study	Author(s)/Journal/ Country	Purpose/Conceptual framework	Design	Subjects/Sample	Measurement/instrument	Reliability/ Validity	Analysis
					Workplace social capital: Workplace Social Capital Questionnaire (Read, 2016)	α = 0.70/CFA	
					Team effectiveness: Technical quality Subscale (Shortell et al., 2004)	α = 0.91/CFA	
					Outcome Factor(s): Nurse-assessed patient care quality: Nurse-assessed patient care quality tool (Aiken and Patrician, 2000)	one item/NR	

Most commonly used (n = 17 studies) was Avolio et al.'s (2007) *Authentic Leadership Questionnaire (ALQ)*. Neider and Schriesheim's (2011) *Authentic Leadership Inventory (ALI)* was the other instrument used to measure authentic leadership in three studies (Mortier et al., 2016; Rahimnia and Sharifirad, 2015; Stander et al., 2015). Wong and Cummings (2009b) utilized four items from the *Leadership Practices Inventory* (LPI; Kouzes and Posner, 1993) to operationalize the four dimensions of authentic leadership.

5.3.6. Analysis

A majority of studies used advanced statistical procedures such as structural equation modelling (SEM; n = 11 studies) and multiple linear regression (n = 7 studies) and path analysis (n = 2 studies).

5.4. Narrative synthesis of results

Throughout the analysis, themes consistent with authentic leadership theory and unique themes specific to findings from our review were identified. Then using content analysis procedures, study findings were organized into categories based on outcomes and mediators of authentic leadership. The associations between authentic leadership and antecedents, mediators and outcomes were indicated by: direction of effects and statistical significance ($p \leq .05$). These were expressed statistically in studies as either correlations or effect estimates (Table 4). Due to heterogeneity of the outcome and mediator variables examined and differences in how associations were evaluated, specific effect sizes were not reported. Maintaining the same overall structure of the authentic leadership theory (Avolio et al., 2004), adaptations included new listings of mediators and outcomes based on review findings and addition of an arrow linking authentic leadership directly to outcomes (Fig. 2). Since there was only one study (Haddad, 2013) that included an antecedent of authentic leadership (structural empowerment positively predicted authentic leadership), this did not merit modifying the theory diagram (Table 4, Fig. 2).

5.4.1. Relationships between authentic leadership and outcomes

Significant associations between authentic leadership and 43 outcomes were found and grouped into two major themes: healthcare staff outcomes and patient outcomes.

5.4.1.1. Healthcare staff outcomes. Outcomes were organized into five subthemes: *personal psychological states*, *satisfaction with work, work environment factors, health and well-being,* and *performance.*

5.4.1.1.1. Personal psychological states. Three healthcare staff outcomes, psychological capital which includes optimism (n = 4 studies), identification which includes personal and social/ organizational identification (n = 2 studies) and trust which includes trust in manager, organization or co-worker (n = 3 studies), reflected personal psychological states. These three concepts were articulated by Avolio et al. (2004) and are included as central concepts in authentic leadership theory. In all but one study (social identification in Wong et al., 2010), authentic leadership was significantly associated with these variables.

5.4.1.1.2. Satisfaction with work. Five subthemes were identified as job satisfaction, career satisfaction, job turnover intention, career turnover intention and work engagement. The most frequently identified outcome, job satisfaction, was significantly associated with authentic leadership in eight out of nine studies. Work engagement was also significantly associated with authentic leadership in three out of four studies.

5.4.1.1.3. Work environment factors. Thirteen outcome variables suggesting the broad theme of work environment factors were grouped into five subthemes: structural empowerment, negative workplace behaviours, workgroup relationships, practice environment and areas of worklife. Structural empowerment was the most commonly studied outcome and was significantly associated with authentic leadership in five studies. Negative workplace behaviours were all significantly, negatively associated with authentic leadership in six studies: incivility in three studies and bullying in four studies. Authentic leadership was associated with various aspects of workgroup relationships reflected in six different outcomes in six studies.

5.4.1.1.4. Health and well-being. Seven outcomes were related to this subtheme. Burnout, composed of emotional exhaustion and cynicism, was the most frequently identified outcome in this subtheme and each was negatively significantly associated with authentic leadership in three studies. Stress outcomes, specifically work stress and stress symptoms, were examined by Rahimnia and Sharifirad (2015) but were not significant. Well-being was significantly associated with authentic leadership in two studies and two outcomes: vitality (Mortier et al., 2016) and psychological well-being (Nelson et al., 2014).

5.4.1.1.5. Performance. Seven outcomes suggested aspects of performance and all (job performance, knowledge sharing, creativity, learning and extra role behaviour) but two (followership and organizational citizenship behaviour) were significantly associated with authentic leadership in a total of four studies.

5.4.1.2. Patient outcomes. Only one study examined a direct relationship between authentic leadership and patient outcomes derived from organizational databases (Johnson, 2015). Three subthemes were falls with injury, patient satisfaction with care and hospital acquired pressure ulcers. However, only falls with injury was negatively significantly associated with authentic leadership.

5.4.2. Relationship between authentic leadership and mediators

In this review, only the first mediator connecting authentic

Table 4
Summary of Study Antecedents, Mediators and Outcomes of Authentic Leadership.

Antecedent/Outcome (Direct effects)	Source	Direction	Significance[a]
Antecedents:			
• Structural empowerment	Haddad (Diss., 2013)	+	S
Healthcare Staff Outcomes:			
Personal Psychological States			
• Psychological capital	Laschinger and Fida (2014b)	+	S
	Du Plessis (Diss., 2014)	+	S
	Malik and Dhar (2017)	+	S
• Optimism	Stander et al. (2015)	+	S
Identification:			
• Personal	Wong et al. (2010)	+	S
	Fallatah et al. (2017)	+	S
• Social	Wong et al. (2010)	+	NS
• Organizational	Fallatah et al. (2017)	+	S
Trust in:			
• Manager	Wong et al. (2010)	+	S
	Wong and Giallonardo (2013)	+	S
	Wong and Cummings (2009b)	+	S
	Fillmore (Thesis, 2013)	+	S
	Coxen et al. (2016)	+	S
• Organization	Stander et al. (2015)	+	S
	Coxen et al. (2016)	+	S
• Co-workers	Coxen et al. (2016)	+	S
Satisfaction with work			
• Job satisfaction	Rahimnia and Sharifirad (2015)	+	S
	Wong and Laschinger (2013)	+	S
	Laschinger and Fida (2015)	+	S
	Laschinger et al. (2012)	+	S
	Giallonardo et al. (2010)	+	S
	Fallatah and Laschinger (2016)	+	S
	Laschinger and Fida (2014b)	+	S
	Laschinger et al. (2016)	+	NS
	Bennett (Diss., 2015)	+	S
	Haddad (Diss., 2013)	+	S
	Stearns (Diss., 2012)	+	S
• Job turnover intention	Laschinger et al. (2016)	−	NS
	Yemi-Sofumade (Diss., 2012)	−	S
• Career satisfaction	Laschinger et al. (2016)	−	NS
• Career turnover intention	Laschinger et al. (2016)	−	NS
• Work engagement	Stander et al. (2015)	+	NS
	Bamford et al. (2013)	+	S
	Giallonardo et al. (2010)	+	S
	Du Plessis (Diss., 2014)	+	S
Work Environment Factors			
• Structural empowerment	Wong and Laschinger (2013)	+	S
	Laschinger and Fida (2015)	+	S
	Laschinger et al. (2013)	+	S
	Fillmore (Thesis, 2013)	+	S
	Read and Laschinger (2015)	+	S
	Laschinger et al. (2016)	+	S
	Read (Diss., 2016)	+	S
	Boamah et al. (2017)	+	S
Negative workplace behaviours:			
• Incivility:			
- Co-worker	Read and Laschinger (2013)	−	S
- Supervisor	Read and Laschinger (2013)	−	S
- Combined	Haddad (Diss., 2013)	−	S
	Plasse (Diss., 2015)	−	S
• Workplace bullying:	Laschinger et al. (2012)	−	S
	Read and Laschinger (2013)	−	S
	Laschinger and Fida (2014a)	−	S
	Bennett (Diss., 2015)	−	S
Workgroup relationships			
• Interprofessional collaboration	Regan et al. (2016)	+	S
	Laschinger and Smith (2013)	+	S
• High quality relationship	Plasse (Diss., 2015)	+	S
• Team psychological safety	Plasse (Diss., 2015)	+	NS
• Social capital	Read (Diss., 2016)	+	S
• Work climate	Nelson et al. (2014)	+	S
• Empathy of leader	Mortier et al. (2016)	+	S
Practice environment:			
• Professional practice environment	Laschinger and Fida (2015)	+	S
	Fallatah and Laschinger (2016)	+	S
• Nursing professional practice culture	Anderson (Diss., 2011)	+	S
• Decisional involvement	Johnson (Diss., 2015)	+	S

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Table 4 (*continued*)

Antecedent/Outcome (Direct effects)	Source	Direction	Significance[a]
• Areas of worklife	Wong and Giallonardo (2013)	+	S
	Bamford et al. (2013)	+	S
	Laschinger et al. (2015)	+	S
	Laschinger and Read (2016)	+	S
Health & Well-Being			
Burnout:			
• Emotional exhaustion	Laschinger and Fida (2014a)	−	S
	Laschinger and Fida (2014b)	−	S
	Wong and Cummings (2009b)	−	S
• Cynicism	Laschinger et al. (2013)	−	S
	Laschinger and Fida (2014a)	−	S
	Laschinger and Fida (2014b)	−	S
Stress:			
• Work stress	Rahimnia and Sharifirad (2015)	−	NS
• Stress symptoms	Rahimnia and Sharifirad (2015)	−	NS
• Attachment insecurity	Rahimnia and Sharifirad (2015)	−	S
Well-being:			
• Vitality	Mortier et al. (2016)	+	S
• Psychological well-being	Nelson et al. (2014)	+	S
Performance			
• Job performance	Wong and Cummings (2009b)	+	S
• Knowledge sharing	Malik et al. (2016)	+	S
• Creativity	Malik et al. (2016)	+	S
• Learning	Mortier et al. (2016)	+	S
• Followership	Du Plessis (Diss., 2014)	+	NS
• Employee extra role behaviour	Malik and Dhar (2017)	+	S
• Organizational citizenship behaviour	Coxen et al. (2016)	+	NS
Patient Outcomes:			
• Patient falls with injury	Johnson (Diss., 2015)	−	S
• Patient satisfaction	Johnson Diss (2015)	+	NS
• Hospital acquired pressure ulcers	Johnson Diss (2015)	−	NS

*Significance: NS = not significant, S = significant at $p < .05$; Diss. = Dissertation.

Mediators (Indirect effects)	Source	Direction	Significance
Authentic leadership → Structural empowerment:			
→ Job satisfaction	Wong and Laschinger (2013)	+,+	S
→ Job performance	Wong and Laschinger (2013)	+,+	S
→ Prof. practice environment	Laschinger and Fida (2015)	+,+	S
→ Short staffing	Laschinger and Fida (2015)	+,−	S
	Boamah et al. (2017)*	+,−	S
→ Emotional exhaustion	Laschinger et al. (2013)	+,−	S
→ Cynicism	Laschinger et al. (2013)	+,−	S
→ Relational social capital	Read and Laschinger (2015)*	+,+	S
→ Social capital	Read (Diss., 2016)	+,+	S
→ Worklife interference	Boamah et al. (2017)*	+,−	S
→ Trust in Manager	Fillmore (Thesis, 2013)	+,+	NS
Authentic leadership → Burnout:			
Emotional exhaustion:			
→ Job turnover intention	Laschinger and Fida (2014a)*	−,+	NS
→ Career turnover intention	Laschinger and Fida (2014a)*	−,+	S
→ Mental health symptoms	Laschinger and Fida (2014b)*	−,+	S
→ Job satisfaction	Laschinger and Fida (2014b)*	−,+	S
Cynicism:			
→ Job turnover intention	Laschinger and Fida (2014a)*	−,+	S
→ Career turnover intention	Laschinger and Fida (2014a)*	−,+	S
→ Mental health symptoms	Laschinger and Fida (2014b)*	−,+	NS
→ Job satisfaction	Laschinger and Fida (2014b)*	−,−	S
Authentic leadership → Negative work behaviours:			
Bullying:			
→ Job turnover intention	Laschinger and Fida (2014a)*	−,+	NS
→ Career turnover intention	Laschinger and Fida (2014a)*	−,+	NS
→ Emotional exhaustion	Laschinger et al. (2012)	−,+	S
→ Job satisfaction	Laschinger et al. (2012)	−,−	S
Incivility:			
→ Psychological Safety	Plasse (Diss., 2015)	−,−	S
Authentic leadership → Areas of worklife:			
→ Adverse events	Wong and Giallonardo (2013)	+,−	S
→ Work engagement	Bamford et al. (2013)	+,+	S
→ Occupational self-efficacy	Laschinger et al. (2015)	+,+	S
→ Civility norms	Laschinger and Read (2016)	+,+	S
Authentic leadership → Trust in manager:			

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Table 4 (*continued*)

Mediators (Indirect effects)	Source	Direction	Significance
→ Areas of worklife	Wong and Giallonardo (2013)	+,+	S
→ Voice	Wong and Cummings (2009b)	+,+	S
→Work engagement	Wong et al. (2010)	+,+	S
→Org. Citizenship behaviour	Coxen et al. (2016)	+,+	NS
Trust in organization:			
→ Work engagement	Stander et al. (2016)	+,+	S
→ Org. Citizenship behaviour	Coxen et al. (2016)	+,+	S
Trust in co-workers:			
→ Org. Citizenship behaviour	Coxen et al. (2016)	+,+	S
Authentic leadership → Attachment insecurity:			
→ job satisfaction	Rahimnia and Sharifirad (2015)	−,−	S
→ work stress	Rahimnia and Sharifirad (2015)	−,+	S
→ stress symptoms	Rahimnia and Sharifirad (2015)	−,+	S
Authentic leadership → Identification:			
Personal:			
→ Trust in manager	Wong et al. (2010)	+,+	S
→ Organizational identification	Fallatah et al. (2017)	+,+	S
Social:			
→ Trust in manager	Wong et al. (2010)	+,+	NS
Authentic leadership → Psychological capital:			
→ Work Engagement	Du Plessis (Diss., 2014)	+,+	S
→ Followership	Du Plessis (Diss., 2014)	+,+	NS
→ Employee extra role behaviour	Malik and Dhar (2017)	+,+	S
Optimism:			
→ Work engagement	Stander et al. (2015)	+,+	S
Authentic leadership → Empathy of leader:			
→ Vitality	Mortier et al. (2016)	+,+	S
→ Learning	Mortier et al. (2016)	+,+	NS
Authentic leadership → Social capital:			
→ Patient care quality	Read (Diss., 2016)	+,+	NS
→ Team effectiveness	Read (Diss., 2016)	+,+	NS
Authentic leadership → Knowledge sharing → creativity	Malik et al. (2016)	+,+	S
Authentic leadership → Work climate → Psychological well-being	Nelson et al. (2014)*	+,+	S
Authentic leadership → Job satisfaction → Turnover intention	Laschinger et al. (2012)	+,-	S
Authentic leadership → Work engagement → Job satisfaction	Giallonardo et al. (2010)	+,+	S
Authentic leadership → Professional practice Environment → Job satisfaction	Fallatah and Laschinger (2016)	+,+	S
Authentic leadership → Followership → Work Engagement	Du Plessis (Diss., 2014)	+,+	NS
Authentic leadership → High Quality Relationship → Psychological Safety	Plasse (Diss., 2015)	+,+	NS

Note: a = significant correlations or betas ($p \leq .05$); S = significant; NS = Not significant; Diss = Dissertation; * = time-lagged studies.

leadership indirectly to an outcome was included. In some studies, longer chains of variables were connected to authentic leadership in models which were assessed using structural equation modelling. However, the indirect effects of authentic leadership on more distal outcomes were not consistently reported and so the focus was placed on mediators and outcomes with the most proximal connection to authentic leadership in the model. There were 23 mediators between authentic leadership and 35 different outcome variables in the included

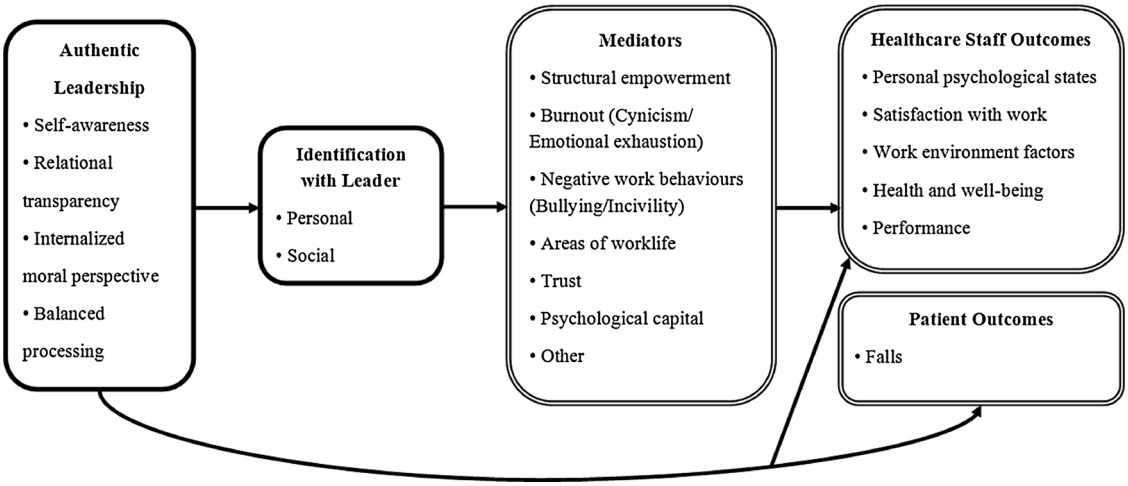

Fig. 2. Adapted authentic leadership model (Avolio et al., 2004) based on findings of systematic review of authentic leadership in healthcare.
Solid lines indicate that findings from the review support demonstrated relationships.
Double lined boxes indicate additions to the original theory.

studies.

Structural empowerment was the most frequently tested mediator connecting authentic leadership to 10 different outcomes such as job satisfaction, job performance, burnout, social capital, short staffing, worklife interference and professional practice environment. Structural empowerment was a significant mediator of the association between authentic leadership and these outcomes in five of seven studies. Burnout components, emotional exhaustion and cynicism, were mediators in one study with four outcomes described in two papers (Laschinger and Fida, 2014a,b). Emotional exhaustion was a significant mediator between authentic leadership and job satisfaction and mental health symptoms (Laschinger and Fida, 2014b) and career but not job turnover intention (Laschinger and Fida, 2014a). Cynicism was also a significant mediator between authentic leadership and job and career turnover intention (Laschinger and Fida, 2014a) and job satisfaction (Laschinger and Fida, 2014b). Negative work behaviours, specifically, incivility and bullying, were examined as mediators of authentic leadership in three studies. Incivility negatively mediated the association between authentic leadership and psychological safety (Plasse, 2015) and bullying was a significant mediator between authentic leadership and emotional exhaustion and job satisfaction in one study (Laschinger et al., 2012). Congruence in the areas of worklife was a significant positive mediator between authentic leadership and these outcomes: work engagement, (Bamford et al., 2013); occupational self-efficacy (Laschinger et al., 2015); and civility norms (Laschinger and Read, 2016). Areas of worklife was also a significant negative mediator of the relationship between authentic leadership and patient adverse events (Wong and Giallonardo, 2013) and was one of few studies linking authentic leadership with patient outcomes. As proposed in the Avolio et al. (2004) theory, trust in the manager was a significant positive mediator of the relationship between authentic leadership and these three outcomes in two studies: areas of worklife (Wong and Giallonardo, 2013); voice or speaking–up behaviour (Wong and Cummings, 2009b); and work engagement (Wong et al., 2010) but not a significant mediator for organizational citizenship behaviour (Coxen et al., 2016). Trust in the organization was a significant mediator of work engagement (Stander et al., 2015) and the organizational citizenship behaviour (Coxen et al., 2016). Coxen et al. (2016) also found that trust in co-workers mediated the relationship between authentic leadership and organizational citizenship behaviour.

Personal and social identification and psychological capital, all of which were proposed as mediators in the in authentic leadership theory, were examined in two studies. Personal identification with the manager was a significant mediator of authentic leadership and trust in the manager (Wong et al., 2010) and organizational identification (Fallatah et al., 2017). In one study, social identification was not a significant mediator of the association between authentic leadership and trust in the manager (Wong et al., 2010). Psychological capital (self-efficacy, hope, optimism and resilience) was tested as a mediator in three studies and was a significant mediator of authentic leadership and work engagement (Du Plessis, 2014) and extra role behaviour (Malik and Dhar, 2017) but not followership (Du Plessis, 2014). In addition, optimism was a mediator between authentic leadership and work engagement (Stander et al., 2015). A number of other mediators of authentic leadership found in studies were only tested in individual studies and the following were significant: knowledge sharing (Malik and Dhar, 2017), work climate (Nelson et al., 2014), job satisfaction (Laschinger et al., 2012), work engagement (Gillonardo et al., 2013), professional practice environment (Fallatah and Laschinger, 2016), and empathy of leader (Mortier et al., 2016). The following mediators were not significant: social capital (Read, 2016), followership (Du Plessis, 2014) and high quality relationships (Plasse, 2015).

In six studies, large models (reported in eight papers) showing multiple mediators between authentic leadership and some outcomes were examined. Positive indirect effects of authentic leadership on nurse assessed quality of care were clearly significant (Wong et al., 2010) and either non-significant (Read, 2016) or not clearly reported (Boamah et al., 2017; Laschinger and Fida, 2015). There was a significant negative indirect association between authentic leadership and nurses' mental health symptoms in one study (Laschinger and Fida, 2015; Laschinger et al., 2015). A significant indirect association between authentic leadership and emotional exhaustion (negative; Laschinger and Read, 2016) and job satisfaction (positive; Read and Laschinger, 2015) were found but not reported for authentic leadership on job turnover intention in another study (Haddad, 2013).

6. Discussion

The aim of this review was to examine the antecedents, mediators and outcomes of authentic leadership in empirical studies conducted in healthcare settings. Findings illustrated significant growth in the number of studies of authentic leadership since 2010, primarily in nursing samples and a few in broader healthcare professional groups. In all but one of the studies, authentic leadership was measured using one of two current authentic leadership instruments. To date, the majority of studies examined a wide variety of staff personal, job, health and well-being, and work environment factors as mediators and/or outcomes of authentic leadership and only a few examined patient outcomes of authentic leadership. Findings of this review provide support for significant associations between authentic leadership and personal psychological states such as trust in the manager, satisfaction with work outcomes such as job satisfaction, and work environment factors such as structural empowerment, work engagement and work group relationships. Also, negative associations between authentic leadership and staff outcomes included negative workplace behaviours (bullying and incivility) and burnout, including both emotional exhaustion and cynicism, provide support for tenets of the theory linking authentic leadership with positive healthcare staff attitudes and behaviours (Avolio et al., 2004).

Because this review was based on Avolio et al.'s (2004) authentic leadership theory, an adapted model in this review was created to further illustrate the study findings as applied to nursing and healthcare (Fig. 2). Two studies (Fallatah et al., 2017; Wong et al., 2010) supported the role of personal and social identification with the leader as mediating mechanisms. Studies reflecting a wider variety of mediators than were included in the original authentic leadership theory were identified even though trust and psychological capital were important mediators in this review as well. Studies also showed direct as well as indirect associations between authentic leadership and a broad list of staff outcomes including both staff work attitudes and behaviours as well as some patient outcomes. However, there were very few studies connecting authentic leadership to patient outcomes such as quality of care and patient adverse events and these were nurse assessed outcomes. Only one study (Johnson, 2015) attempted to link authentic leadership to objective patient care outcomes such as patient falls with injuries which was significantly negatively associated with authentic leadership and patient satisfaction and hospital acquired pressure ulcers which were not significantly associated with authentic leadership. Johnson (2015) noted that inconsistencies in data collection procedures for pressure ulcers and insufficient unit numbers in the study could have accounted for insignificant results. In addition, Johnson (2015) stated that her study did provide support for the strength of the association between unit level authentic leadership and structural empowerment and patient falls. Structural empowerment was found as the only antecedent of authentic leadership in this review (Haddad, 2013) and this relationship warrants further examination in future studies. Gardner et al.'s (2011) review also noted only two quantitative studies examining the antecedents of authentic leadership which were psychological capital and self-monitoring. Since that review, findings from a study of personnel in a broad range of business industries showed that self-knowledge and self-consistency positively predicted authentic leadership (Peus et al., 2012). Self-knowledge about leaders' values,

strengths, and weaknesses was significantly associated with being an authentic leader. Also, self-consistency, which refers to coherence between leaders' values and beliefs was found to be important to whether leaders were perceived as authentic (Peus et al., 2012). Increased empirically based knowledge of the attitudes and skills such as building self-awareness, understanding others' needs and expressing genuine feelings that may be preconditions for authentic leadership is needed in order to fully advance authentic leadership in practice (Peus et al., 2012).

6.1. Implications for theory

Theory is a fundamental guide for research as it identifies the important variables and how they may be interrelated so they can be empirically tested (Shalley, 2012). The fact that all studies used a theoretical framework indicated that the validity of research findings describing authentic leadership in healthcare was strengthened by theory. In support of Avolio et al.'s (2004) authentic leadership theory, findings suggested that authentic leaders may contribute to positive organizations by promoting the elements of healthy work environments for staff and patients. Specifically, there were significant associations between authentic leadership and job satisfaction, structural empowerment, areas of worklife, positive workgroup relationships, and trust as well as negative associations with negative work group behaviours and burnout. Findings also supported that the four dimensions of authentic leadership (balanced processing, relational transparency, internalized moral perspective, and self-awareness) as articulated in authentic leadership theory were related to varying healthcare staff outcomes that encompassed a range of work attitudes (e.g., job satisfaction, work engagement, well-being) and to a lesser extent some behaviours (e.g., extra role behaviour, knowledge sharing, turnover).

6.2. Implications for leadership practice and policy

The rapid changes in and growing complexity of healthcare systems necessitate that all care providers collaborate and maximize their efficiency as never before, and effective leaders are integral to creating the conditions where challenging problems can be solved (Cummings et al., 2010; Shirey and White-Williams, 2015). Documented concerns about an anticipated shortfall of future healthcare leaders (Titzer et al., 2014) underscore the necessity to recruit, develop, and retain leaders who can overcome these challenges and contribute to care environments and processes that produce the positive outcomes needed in dynamic healthcare systems (Waite et al., 2014). Given that findings provided some support for the link between authentic leadership and positive outcomes for staff, there is some merit in considering the application of authentic leadership theory and strategies to increase authentic leadership in nursing and healthcare settings. According to Kark and Shamir (2002), engagement, motivation, commitment, satisfaction, and involvement of staff will increase if their leaders are authentic. Therefore, healthcare organizations may consider recruiting their leaders/managers based on the essential components of authentic leadership. Also, leadership development programs that incorporate authentic leadership theory can enhance leadership competencies and ultimately the work environments for staff and patients. Findings of Baron's (2016) recent study of a three-year leadership development program showed an increase in authentic leadership development amongst leaders in middle management positions in Quebec. This program was based on action learning principles and primarily focused on the application of authentic leadership development as participants worked through real problems, experiments, activities, and case studies with peers and received coaching.

6.3. Implications for education

Leadership development in undergraduate education should include some focus on authentic leadership to serve as a foundation for effective leadership by preparing students with the competencies of authentic leadership and enabling them to become effective practitioners and potential future leaders. Many healthcare leadership experts have suggested that leadership skills are critical at every level and in wide-ranging healthcare contexts (MacPhee et al., 2013; Porter-O'Grady, 2011). Thus, it may be essential to introduce students to leadership development during their nursing education as one approach to promoting future graduates' influence on the profession and healthcare outcomes (Laschinger et al., 2013; Waite et al., 2014). Waite et al. (2014) reported on positive outcomes of the implementation of a unique authentic leadership course within an undergraduate nursing program in the United States. Educating students and new graduate nurses to be equipped with authentic leadership competencies should be a priority so that knowledge can be translated into the development of future healthcare leaders (Cummings et al., 2010; Laschinger et al., 2013).

6.4. Implications for future research

As far as it is known, this review is considered the first systematic review of authentic leadership research in nursing and healthcare; therefore, these findings may provide direction for future research on authentic leadership. The findings were based on Avolio et al.'s (2004) authentic leadership theory and suggest the following as priorities for future research. Firstly, there is a significant gap in terms of understanding the antecedents of authentic leadership and future studies need to increase knowledge of attitudes and skills, such as building self-awareness, understanding others, and expressing authenticity, that may inform the practice of authentic leadership. Second, there are some other areas that have not been examined well in studies. For example, Avolio et al.'s (2004) theory suggested the associations between authentic leadership, hope, and positive emotions but there were only a few studies examining this relationship (Du Plessis, 2014; Laschinger and Fida, 2014b; Malik and Dhar, 2017; Stander et al., 2015). In terms of patient outcomes, only one study (Johnson, 2015) empirically tested the association between authentic leadership and actual or objective patient outcomes. Third, future studies need to include longitudinal and experimental designs in order to examine causal associations between authentic leadership and outcomes. It was noteworthy that three studies presented time-lagged data showing significant associations between authentic leadership and outcomes such as, job satisfaction and mental health symptoms (Laschinger and Fida, 2014b), psychological well-being (Nelson et al., 2014), and burnout (Boamah et al., 2017). Lastly, future studies should be expanded to include more diverse samples of healthcare professionals and a wider variety of healthcare settings such as, long term care, community care, public health, and mental healthcare.

6.5. Limitations

Even though meticulous methods were employed in this review, there are limitations. First, while dissertations and theses were included in this review, all grey literature databases were not searched and, as such, this review may not be representative of all relevant work in the field. There could be reporting bias due to the fact that only English language studies were included which may have excluded other potentially relevant studies. Where details of study methods were not clear, no attempt was made to clarify these details by contacting the manuscript authors. This may have resulted in aspects of methods being scored lower in the quality assessment phase, possibly reflecting quality of the reporting rather than the actual methods used. With the exception of three time-lagged studies, the majority of studies were cross-sectional correlational designs which do not allow for causal inferences, nor do they support claims of specific directionality of effect. All but one study (Johnson, 2015) used self-reported data, which introduced a

potential response bias and limits the objectivity of findings and no studies were excluded on the basis of quality. Generalizability of findings are limited by the fact that the majority of studies were conducted in North America with several studies in Canada from one research group and the lack of heterogeneity among samples and settings with most mainly registered nurses working in acute care settings.

7. Conclusion

Findings of this review point to an increased body of research on the relationship between authentic leadership and its antecedents, mediators and outcomes in nursing and healthcare. The growth in the number of studies may suggest that the tenets of Avolio et al.'s (2004) theory of authentic leadership have relevance for leadership in modern day healthcare settings. Findings of this review provide support for this theoretical framework and suggest the need for additional testing in future research in nursing and healthcare. Combined with knowledge from other reviews reporting that relational leadership styles are positively linked to staff and patient outcomes (Cummings et al., 2010; Wong et al., 2013), these results further support that healthcare organizations need leadership from individuals who exhibit sound relational skills and authentic concern for their staff as persons and who can communicate honestly and openly with others to achieve positive outcomes for their staff, patients and organizations. Knowledge generated by this systematic review provides a more comprehensive understanding of authentic leadership which can be used to educate future leaders and managers about the importance and benefits of authentic leadership. Finally, illuminating the current support for the positive outcomes of authentic leadership in healthcare has the potential to improve leadership development strategies and outcomes within healthcare organizations.

Conflicts of interest

The authors have no conflicts of interest to declare.

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