Authentic leadership and thriving among nurses: the mediating role of empathy

ANNELEEN VIONA MORTIER MSc[1], PETER VLERICK PhD[2] and ELS CLAYS PhD[3]

[1]PhD Candidate, [2]Professor, *Department of Personnel Management, Work and Organization Psychology, Ghent University, Ghent and* [3]Professor, *Department of Public Health, Ghent University, Ghent, Belgium*

Correspondence
Anneleen Viona Mortier
Henri Dunantlaan 2
B-9000 Ghent
Belgium
E-mail:
Anneleen.Mortier@UGent.be

MORTIER A.V., VLERICK P. & CLAYS E. (2015) *Journal of Nursing Management*

Authentic leadership and thriving among nurses: the mediating role of empathy

Aim To examine the relationship between perceived authentic leadership and two dimensions of thriving (learning and vitality) among nurses, and to study the mediating role of empathy in this relationship.
Background Nurses' thriving is a key asset for health care organisations, and its significant role warrants the need to identify the underlying key determinants and psychological mechanisms.
Method A cross-sectional design was carried out in a large hospital in September 2013. Self-administered questionnaires were distributed to 360 nurses. The main hypotheses were tested through hierarchical regression analyses.
Results The significant positive relationship between perceived authentic leadership and vitality was mediated by perceived empathy. This mediation, however, was not confirmed in relation to learning.
Conclusions Nurse managers' authentic leadership enhances nurses' thriving at work. Furthermore, empathic nurse managers seem to increase the vitality of their nurses.
Implications for nursing management Training nurse managers in authentic leadership skills is important for the nursing field, as those skills help nurse managers to better express empathy and consequently foster thriving in nursing.

Keywords: authentic leadership, empathy, learning, thriving, vitality

Accepted for publication: 3 July 2015

Background

Recent developments within the field of organisational behaviour have pointed to the importance of employees' thriving for organisational performance (Porath *et al.* 2012). So far, neither thriving nor its antecedents and explanatory mechanisms have been studied within the nursing context. Therefore, the current study aims to examine nurses' thriving. It focuses on the relationship between perceived nurse managers' authentic leadership (antecedent) and nurses' thriving. Additionally, it investigates whether perceived nurse managers' empathy (mediator) can account for this relationship.

Thriving at work is defined as 'a psychological state in which individuals experience both a sense of vitality and a sense of learning at work' (Spreitzer *et al.* 2005, p. 538). When experiencing thriving, people feel alive and energised (vitality) and perceive that they are making progress (learning) (Porath *et al.* 2012). Employees who are only experiencing vitality, but are not learning, may feel they cannot make full use of their potentials. Conversely, when employees are learning, but not experiencing vitality, they will feel drained from their work.

DOI: 10.1111/jonm.12329

Both vitality and learning are key assets in the nursing context. Indeed, nurses are continuously confronted with new work conditions such as new technologies, new treatment methods and a changing distribution of tasks (Pool *et al.* 2013). These changes imply that nurses constantly have to learn in order to maintain and ameliorate their quality of work (Pool *et al.* 2013). Besides, vitality is an important motivational component in the workplace and is related to job performance (Carmeli *et al.* 2009) and well-being (Shirom 2010).

Theoretical framework

Research on thriving has so far been scarce, particularly in the nursing context. Therefore, the current study attempts to broaden the current knowledge by focusing on one potential key antecedent of thriving, namely authentic leadership. Previous studies indicated that leadership is associated with positive work outcomes, such as employees' work-related well-being (e.g. Wong *et al.* 2010). For instance, relational-focused leaders elicited more positive outcomes in the nursing work environment than task focused leaders (Cummings *et al.* 2010). Also Utriainen *et al.* (2014) posited, in their theoretical nurses' well-being model, that fair and supportive nurse managers have a direct and an indirect influence on nurses' work-related well-being.

Authentic leadership is a leadership style that is considered fair and supportive (Avolio & Gardner 2005). Also, it is considered to be a relevant leadership style in the nursing context (e.g. Wong & Laschinger 2012). Avolio and Gardner (2005) distinguished four dimensions of authentic leadership in their conceptualisation: self-awareness, an internal moral perspective, balanced processing and relational transparency. Self-awareness demonstrates how the leaders perceive themselves in comparison with the world and with their understanding of their own strengths and weaknesses. Next, internalised moral perspective refers to an internalised and integrated form of self-regulation. Authentic leaders align their beliefs with their actions and are not often persuaded by external pressures. The third component, balanced processing, refers to their decision-making, which is based on the analyses of all relevant data, being positive or confirming information or negative clues. The final component, relational transparency, reflects how openly the leader presents her/himself to others. Encompassing all four components, authentic leadership provides a healthier, more ethical work environment. For instance, Avolio *et al.* (2004) reported a positive relationship between authentic leadership and positive work outcomes such as employee job satisfaction and engagement.

Several studies have demonstrated the importance of authentic leadership in the nursing context. For example, Laschinger *et al.* (2012) found that authentic leadership was associated with reduced turnover intentions in graduate nurses. Wong and Laschinger (2012) ascertained that authentic leaders had a positive effect on nurses' job satisfaction and self-rated performance.

This paper contributes to the field of nursing leadership research by investigating whether authentic leadership is related to thriving in a nursing context. It has drawn inspiration from the following areas of understanding. First, there seems to be a positive relationship between authentic leadership and positive work outcomes that are likely to occur in thriving environments (Wong & Laschinger 2012). Then, it has been confirmed that authentic leadership is positively associated with work engagement, which is related to thriving (e.g. Wong *et al.* 2010). Previous studies have also suggested an association between leadership and job related learning (Loon *et al.* 2012) and between leadership and vitality at work (Carmeli *et al.* 2009).

Based on the studies mentioned above and following the theoretical model of Utriainen *et al.* (2014), we expect a positive relationship between perceived nurse manager's authentic leadership and nurses' thriving (vitality and learning). We propose the following hypothesis:

> Hypothesis 1: Authentic leadership is positively related to nurses' (a) vitality and (b) learning.

In following this hypothesis, a question arises about which psychological mechanism can explain the potential positive relationship between authentic leadership and thriving. A few studies have thus far focused on the identification of mediators between authentic leadership and positive work outcomes in the nursing environment. Wong and Laschinger (2012) found that empowerment is a variable accounting for the relationship between authentic leadership, job satisfaction and job performance. In the study of Wong *et al.* (2010), the mediators were personal identification and trust in the manager.

Our research investigates perceived nurse managers' empathy as a potential mediator in the potential positive relationship between authentic leadership and thriving. Empathy is an important social competence for nurses, especially when nurses are interacting with and taking emotional care of patients (Shanta &

Gargiulo 2014). Empathy fosters understanding of patients' moods and feelings (Rego *et al.* 2010) and is also important for leaders. Being part of emotional intelligence (Goleman 2004), empathy is linked with leaders' effectiveness (Akerjordet & Severinsson 2004) and predicts leadership potential (Sadri 2012). Empathic leaders have a positive impact on their subordinates (Castro *et al.* 2012), thus enhancing their job performance and job satisfaction (Wong & Law 2002).

Hence, we argue that empathy is an explanatory variable in the relationship between authentic leadership and subordinates' thriving in that subordinates' recurrent experience of leaders' empathy is welcomed and often results in increased feelings of connectivity at work (Carmeli & Spreitzer 2009). Moreover, leaders' empathy at work can be considered as an important emotional work resource that can induce a motivational and energetic activation in nurses, resulting in more motivation to learn and more vitality at work (Bakker & Demerouti 2007).

This leads us to formulate our second hypothesis (see Figure 1):

> Hypothesis 2: The relationship between authentic leadership and nurses' (a) vitality and (b) learning is mediated by nurse managers' empathy.

Method

Sample

Nine hundred and fifty nurses were approached in a large hospital. Of this population, 360 returned a usable questionnaire, yielding a response rate of 37.9%, which can be considered acceptable (Baruch & Holtom 2008). The sample consisted of 83.4% women. Age ranged from 20 to 60+ years, with 30.7% between 30 and 39 years old, followed by 28.5% between 20–29 years. The minority of the sample received higher education, meaning that 11.8% of the respondents had a master's or higher degree. On average, the nurses in our sample had 14.4 years seniority in the current hospital, with their years of experience ranging from 1 month to 43 years. Nurses in this sample were recruited from 54 different units, with 8 nurses per unit on average. Ward size varied from 1 nurse to 30 nurses.

Measures

Empathy

Perceptions of the nurse managers' empathy were measured with four items adopted from a subscale of the questionnaire developed by Wong and Law (2002) on emotional intelligence. Instead of self-rated empathy, we chose to consider the nurses' point of view about their nurse manager, since perceived empathy by others is a stronger predictor than self-perceived empathy. This is because self-reported ratings tend to be biased (Cullen *et al.* 2015). Moreover, since we examined an outcome among nurses, the perception of the nurses managers' empathy of the nurses has a stronger impact on this outcome in comparison with that of the nurse managers themselves. In line with Mahsud *et al.* (2010), the item wording was adapted so that the nurses could rate the empathy of their nurse manager. A sample item of this adaption is: 'My nurse manager is sensitive to the feelings and emotions of others'. The coefficient alpha of reliability for this scale was 0.87.

Authentic leadership

Applying the same reasons outlined above, we investigated the nurses' point of view about authentic leadership of their nurse manager. To measure this, the 16-item Authentic Leadership Inventory (ALI) was applied (Neider & Schriesheim 2011). Each dimension of authentic leadership was measured using four items. A sample item of self-awareness was: 'My nurse manager describes accurately the way the others view his/her abilities'; for relational transparency: 'My nurse manager objectively analyses relevant data before making a decision'; for balanced processing: 'My nurse manager asks for ideas that challenge his/her core beliefs'; and for moral perspective: 'My nurse manager shows consistency between his/her beliefs and actions'. To compose authentic leadership, the

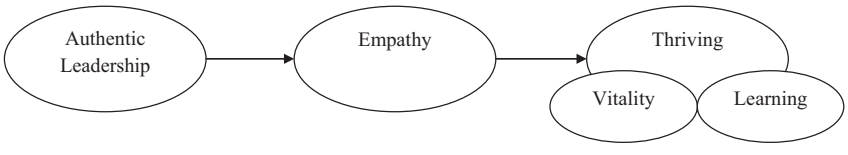

Figure 1
Representation of hypothesis 2: authentic leadership has an indirect effect on vitality and learning through empathy.

total scale score was calculated (Neider & Schriesheim 2011). The coefficient alpha of reliability was 0.93.

Thriving

Nurses' thriving was measured using the 10-item scale of Porath *et al.* (2012). Half of the items measured learning, the other half vitality. Sample items for the two dimensions were: 'I find myself learning often' (learning) and 'I feel alive and vital' (vitality). The coefficient alpha of reliability for learning and vitality were 0.80 and 0.86, respectively.

Each of the three scales described above was translated into Dutch using the back-translation method (Brislin 1970). Answers were rated on a five-point Likert scale, ranging from 1, 'totally disagree' to 5, 'totally agree'. Additionally, a demographic questionnaire was also used to gather information about the participants' gender, age, seniority in the current hospital, unit and education.

Data collection and ethical considerations

All nurses were invited to participate in the study in August 2013, and were given a paper version of the questionnaire. A cover letter was attached to the questionnaire explaining the purpose of the study, as was the informed consent form with all the necessary information about their rights and the researchers' contact details. The questionnaires were distributed and collected using the internal mail service by October 2013. All the participants provided their informed consent. This study was approved by the medical ethics committees of the authors' University and the participating hospital.

Data analysis

Data analysis was performed using IBM SPSS Statistics, version 22. Results were considered statistically significant at the $P \leq 0.05$ level. Since our hypotheses were formulated at the individual level, we analysed our data at the individual level. In all our analyses, we controlled for gender, age, seniority in the current hospital and education (Niessen *et al.* 2012, Porath *et al.* 2012). To test the relationship between authentic leadership and thriving, a hierarchical regression analysis was performed. To test the second hypothesis (mediation analysis), we used the 3-step procedure of Baron and Kenny (1986). A bootstrapping method was also applied to these analyses (Hayes 2013). Bootstrapping drew random samples with replacement multiple times from the original data set. Next, a 95% confidence interval was calculated for the effects. Lastly, a Sobel test was used to test whether the indirect effect of authentic leadership on thriving through empathy was significantly different from zero (Preacher & Hayes 2004).

Since the nurses were clustered within units, and we wanted to rule out the effect this could have on our results, we conducted supplementary analyses using linear mixed models to control for possible unit level effects (Bliese 2000).

Results

Table 1 displays the means, standard deviations, correlations and internal consistencies of the measures in this study. All key variables were statistically significantly and positively correlated.

To test the first hypothesis at the individual level, a hierarchical regression analysis was carried out with vitality and learning as outcome variables and authentic leadership as a predictor variable.

Regarding vitality (see the left side of Table 2), the results show that the control variables were not significantly related to thriving ($F_{4,351} = 0.451$; $P = 0.772$). Authentic leadership was entered in step 2 and explained 7.2% incremental variance in vitality ($F_{1,350} = 27.20$; $P < 0.001$). A higher score on authentic leadership was associated with more vitality in

Table 1
Means, standard deviations, Pearson correlations and internal consistencies of the studied variables

	M	*SD*	*1*	*2*	*3*	*4*	*5*	*6*
1. Organisational seniority	14.35	11.03	–					
2. Authentic leadership	53.40	10.58	0.14**	(0.93)				
3. Empathy	12.89	3.29	0.14**	0.66**	(0.87)			
4. Thriving	39.36	4.91	−0.10	0.31**	0.31**	(0.85)		
5. Vitality	19.26	3.26	0.01	0.27**	0.30**	0.88**	(0.86)	
6. Learning	20.13	2.57	−0.18**	0.25**	0.21**	0.80**	0.41**	(0.80)

Internal consistency reliabilities (α) are shown on the diagonal.
$n = 355$.
*$P < 0.05$; **$P < 0.01$.

Table 2
Hierarchical regression of learning and vitality on control variables and authentic leadership

	Vitality		*Learning*	
Predictor	*Step 1*	*Step 2*	*Step 1*	*Step 2*
Control variables				
Age	−0.04	−0.01	−0.05	−0.01
Gender†	−0.02	−0.01	0.01	0.02
Organisational seniority	0.05	−0.02	−0.14	−0.22*
Education‡	−0.07	−0.06	0.01	0.02
Authentic leadership		0.27**		0.29**
R^2	0.01	0.08**	0.04**	0.12**
Adjusted R^2	−0.01	0.06**	0.02**	0.10**
ΔR^2	0.01	0.07**	0.04**	0.08**

n = 358 for learning and 356 for vitality. The values in the tables are the standardised regression weights (β).
*P < 0.05; **P < 0.01.
†0 = male, 1 = female.
‡0 = lower education, 1 = higher education (Master's or higher degree).

Table 3
Hierarchical regression of empathy on control variables and authentic leadership

Predictor	*Step 1*	*Step 2*
Control variables		
Age	−0.26	−0.18*
Gender†	−0.04	−0.01
Organisational seniority	0.36**	0.20*
Education‡	0.05	0.08
Authentic leadership		0.66**
R^2	0.04	0.46**
Adjusted R^2	0.03	0.45**
ΔR^2	0.04	0.42**

The values in the tables are the standardized regression weights (β).
n = 360.
*P < 0.05; **P < 0.01.
†0 = male, 1 = female.
‡0 = lower education, 1 = higher education (Master's or higher degree).

nurses (β = 0.27; P < 0.001). Regarding learning (see the right side of Table 2), the results indicate that only the control variable seniority in the current hospital was statistically significant (β = −0.22; P = 0.047). Authentic leadership, which was entered in step 2, explained 8.2% incremental variance in this variable ($F_{1,352}$ = 32.86; P < 0.001). The more authentic the nurse manager was perceived, the more nurses reported to have learned at work (β = 0.29; P < 0.001). These results have confirmed hypothesis 1.

To test the mediation hypothesis, three conditions must be met according to the multi-step procedure for analysing mediating effects (Baron & Kenny 1986). The first step of these analyses was tested for hypothesis 1 (see Table 2) and the results show that authentic leadership was positively related to both thriving components (vitality and learning). The second step tested whether authentic leadership was related to empathy of the leader. Thus, a hierarchical regression was conducted with nurse managers' empathy as an outcome variable and authentic leadership as a predictor variable (see Table 3), to test the effect of the predictor variable on the mediator. Control variables were entered in the first step of the regression, and authentic leadership in the second step. Again, seniority was the only statistically significant control variable (β = 0.36, P = 0.001). In the second step, authentic leadership explained 41.9% of the incremental variance in empathy ($F_{1,354}$ = 273.24, P < 0.001). Authentic leadership was strongly and positively related to nurse managers' empathy (β = 0.66; P < 0.001).

In the third step we tested whether empathy of the leader influenced thriving. Additionally, in this step, the strength of the direct relationship between authentic leadership and thriving should be mitigated. Here, a hierarchical regression was used with vitality and learning as outcome variables. The following variables were added: control variables (step 1), authentic leadership (step 2) and empathy (step 3).

Regarding vitality (see the left side of Table 4), nurse managers' empathy explained 2.8% incremental variance in this variable ($F_{1,349}$ = 10.78; P = 0.001). The more nurses perceived their nurse manager as empathic, the more vitality the nurses reported (β = 0.23; P = 0.001). Furthermore, a Sobel test (Preacher & Leonardelli 2001) showed that the regression weight of authentic leadership reduced significantly (β = 0.13) and became statistically insignificant when controlling for empathy (z = 3.21; P = 0.001). Additionally, bootstrapped confidence intervals (95%) were computed using Hayes Process 2.10 software (Hayes 2013) (5000 bootstrapped samples). After we entered control variables and authentic leadership in the analysis, the confidence interval for the mediating effect of empathy on vitality was CI (0.019; 0.071) (z = 0.045, SE = 0.013), whereas authentic leadership no longer had a direct effect on vitality [CI (−0.003; 0.080) (z = 0.039, SE = 0.021)]. These results indicate perfect or full mediation (Baron & Kenny 1986).

Regarding learning (see right side of Table 4), leaders' empathy did not explain incremental variance in this variable ($F_{1,351}$ = 2.61; P = 0.11). Although bivariate analysis (see Table 1) showed a positive association between leaders' empathy and learning (r = 0.21; P < 0.01), multivariate analysis through hierarchical regression (see Table 4) revealed that nurses' learning remained strongly and positively associated with the authentic leadership style of the nurse

Table 4
Hierarchical regression of learning and vitality on control variables, authentic leadership and empathy

	Vitality			*Learning*		
Predictor	*Step 1*	*Step 2*	*Step 3*	*Step 1*	*Step 2*	*Step 3*
Control variables						
Age	−0.04	−0.01	0.03	−0.05	−0.01	0.01
Gender†	−0.02	−0.01	−0.01	0.01	0.02	0.02
Organisational seniority	0.05	−0.02	−0.06	−0.14	−0.22*	−0.24*
Education‡	−0.07	−0.06	−0.07	0.01	0.02	0.01
Authentic leadership		0.27**	0.13		0.29**	0.22**
Empathy			0.23**			0.11
R^2	0.01	0.08**	0.11**	0.04**	0.12**	0.12
Adjusted R^2	−0.01	0.06**	0.09**	0.02**	0.10**	0.11
ΔR^2	0.01	0.07**	0.03**	0.04**	0.08**	0.01

n = 358 for learning and 356 for vitality. The values in the tables are the standardised regression weights (β).
*P < 0.05; **P < 0.01.
†0 = male, 1 = female.
‡0 = lower education, 1 = higher education (Master's or higher degree).

manager (β = 0.22, P = 0.001), even after we controlled for nurse managers' empathy ($F_{1,351}$ = 2.61; P = 0.11). This indicates that leaders' empathy is not mediating the positive relationship between authentic leadership and nurses' learning.

In addition to the main analyses, we conducted linear mixed models to control for the effect the nurses' unit might have on our results (Bliese 2000). Initially, we estimated the null models for vitality and learning as outcomes, and in these models individual- and group-level predictors were excluded. The results indicated that unit structure explained only 8% of the variance in vitality (ICC = 0.08) and 7% of the variance in learning (ICC = 0.07). In the next step, control variables and individual perception of authentic leadership were included in the model. Adding aggregated unit level authentic leadership did not have any incremental value to the individual perceptions, nor for vitality (b = −0.04; SE = 0.04; P = 0.38) nor for learning (b = −0.01; SE = 0.03; P = 0.88). The same stepwise models were repeated for empathy in relationship to both outcomes, and also here empathy at unit level did not contribute to predict vitality (b = 0.06; SE = 0.13; P = 0.61) nor learning (b = 0.07, SE = 0.10; P = 0.47).

Discussion

The goal of our study was to investigate the relationship between perceived authentic leadership and nurses' thriving, which is a relatively new perspective on work related well-being, and to study the mediating role of empathy in this relationship. To our knowledge, this study is the first to investigate authentic leadership and thriving in a nursing context.

The results showed a positive association between perceived authentic leadership and both thriving indicators, confirming our first hypothesis. These results strengthen the established understanding that authentic leadership has a positive impact on positive work outcomes such as thriving (i.e. Avolio *et al.* 2004, Carmeli *et al.* 2009). This finding is in line with earlier studies, which demonstrate the influence of leadership on employees' learning behaviour and motivation to learn (Loon *et al.* 2012). Moreover, our results confirm the positive relationship between leadership and vitality (Hamilton & Schriesheim 2001). The paper has thus contributed to the understanding of the relationship between authentic leadership, vitality and learning within a nursing population.

In relation to our second hypothesis, we stated that perceived empathy mediates the relationship between authentic leadership and thriving (learning and vitality). Our results partially support our hypothesis. The results showed full mediation of nurse managers' empathy in the relationship between authentic leadership and vitality. However, a positive association between authentic leadership and learning was not explained by empathy of the leader. In what follows, we will first discuss the full mediation on vitality; then the lack of mediation on learning.

A first possible explanation of the full mediation is that, as authentic leaders, showing empathy for their subordinates might increase the positive rating of the leaders, and heighten the amount of support the subordinates offer to their leader (Goldstein *et al.* 2014). Therefore, empathy from leaders can strengthen the relationship between leader and subordinates and elicit more positive feelings in the work environment (Wong & Law 2002), such as vitality.

Another possible explanation for these results could be the typical extensive relational transparency exposed by an authentic leader (Avolio & Gardner 2005). Relational transparency refers to how open and transparent leaders are towards their followers in sharing information with each other (Avolio & Gardner 2005). Empathy could help with this open and transparent sharing of information. By being empathic, leaders understand the position of their subordinates and can help them when necessary (Yukl 2010). Thus, when nurses are experiencing problems, their authentic leaders can readily assist or guide them. By doing so, the leaders have to understand the problem and to consider the other's point of view (Gunther *et al.* 2007). As a result, subordinates may feel more energised and motivated to perform their job.

One possible explanation for the absence of mediation on learning is nurses' colleagues. When dealing with work related problems, maybe nurses are more inclined to seek and find help in their peers or colleagues than in their nurse managers. Authentic leaders might encourage their subordinates to exchange knowledge with each other. As a consequence, it could be that peers' empathy, and more broadly, the social support of colleagues, have a stronger impact on nurses' learning than nurse managers' empathy.

Secondly, the hypothesised mediating role of leaders' empathy in the relationship between authentic leadership and learning might be suppressed by unmeasured individual characteristics such as nurses' willingness to learn, their cognitive flexibility or intrinsic motivation. For example, we speculate that nurses will learn more when they have the intrinsic motivation to actually learn something. As a consequence, lack of intrinsic motivation can suppress the potential mediating role of nurse managers' empathy in the relationship between authentic leadership and learning.

Limitations and future research

The presented results need to be interpreted with caution, owing to some study limitations. First, we did not measure potential moderators that could have influenced the mediation in the relationship between authentic leadership and nurses' thriving. These moderators include individual characteristics and contextual factors. For instance, cultural factors might influence this relationship. We conducted our study in an individualistic country, where people are encouraged to be themselves (i.e. being authentic). It might be that the hypothesised relationships are weaker in more collectivistic countries, where a sense of belonging is more central (Hofstede 1983).

Secondly, as our findings are based on a cross-sectional research design, no causal statements can be inferred. Although the present study has shown that there is a strong positive relationship between authentic leadership and nurses' vitality, and that such a relationship is mediated by the nurse managers' empathy, further longitudinal studies are needed to investigate the potential causal effects.

Finally, exclusively self-report measures were used in this study. These measures can cause common method variance (Podsakoff *et al.* 2003). To limit this variance, we emphasised in our study that the participants' responses were anonymously processed. Additionally, we also used existing valid scales with good internal consistencies and consisting of multiple items (Spector 2006).

To overcome the limitations mentioned above, further research on the relationship between authentic leadership style and employees' learning and vitality is needed.

Implications for nursing management

The findings of this study indicate that authentic leadership and leaders' empathy, as perceived by their subordinates, are relevant in the nursing context. Authentic nurse managers express more empathy for their nurses, which subsequently influences nurses' well-being, resulting in more invigorated nurses and more job-related learning among their staff.

Building on these findings, we encourage nurse managers' to use or learn an authentic leadership style and to express empathy for their nurses. Additionally, the results advocate the development and implementation of an advanced leadership development training programme where authentic leadership skills and the expression of empathy for subordinates can be learned and stimulated, since both are associated with nurses' thriving.

Conclusion

Our study has indicated that authentic leadership may enhance nurses' thriving in the workplace. Furthermore, we have shown that nurse managers' empathy fully mediates the relationship between authentic leadership and vitality. All these findings suggest that nurse managers should be aware that both their level of empathy and leadership style can be expected to influence the vitality of their nurses.

Acknowledgements

We would like to thank Tom Durnez for his contribution to the data collection.

Sources of funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethical approval

Approval from this study was obtained from the medical ethics committees of Ghent University and the participating hospital.

References

Akerjordet K. & Severinsson E. (2004) Emotional intelligence in mental health nurses talking about practice. *International Journal of Mental Health Nursing* **13** (3), 164–170.

Avolio B.J. & Gardner W.L. (2005) Authentic leadership development: getting to the root of positive forms of leadership. *The Leadership Quarterly* **16**, 315–338.

Avolio B.J., Gardner W.L., Walumbwa F.O., Luthans F. & May D.R. (2004) Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviours. *The Leadership Quarterly* **15**, 801–823.

Bakker A.B. & Demerouti E. (2007) The Job Demands-Resources Model: state of the art. *Journal of Managerial Psychology* **22**, 309–328.

Baron R.M. & Kenny D.A. (1986) The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* **51**, 1173–1182.

Baruch Y. & Holtom B.C. (2008) Survey response rate levels and trends in organizational research. *Human Relations* **61**, 1139–1160.

Bliese P.D. (2000) Within-group agreement, non-independence and reliability: implications for data aggregation and analysis. In *Multilevel Theory, Research and Methods in Organizations* (K.J. Klein & S.W.J. Kozlowski eds), pp. 349–381. Jossey-Bass, San Francisco.

Brislin R.W. (1970) Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology* **1**, 185–216.

Carmeli A. & Spreitzer G.M. (2009) Trust, connectivity, and thriving: implications for innovative behaviors at work. *Journal of Creative Behavior* **4** (3), 169–191.

Carmeli A., Ben-Hador B., Waldman D.A. & Rupp D.E. (2009) How leaders cultivate social capital and nurture employee vigor: implications for job performance. *Journal of Applied Psychology* **94** (6), 1553–1561.

Castro F., Gomes J. & de Sousa F.C. (2012) Do intelligent leaders make a difference? The effect of a leader's emotional intelligence on followers' creativity. *Creativity and Innovation Management* **21** (2), 171–182.

Cullen K.L., Gentry W.A. & Yammarino F.J. (2015) Biased self-perception tendencies: self-enhancement/self-diminishment and leader derailment in individualistic and collectivistic cultures. *Applied Psychology* **64** (1), 161–207.

Cummings G.G., MacGregor T., Davey M. *et al.* (2010) Leadership styles and outcome patterns for nursing workforce and work environment: a systematic review. *International Journal of Nursing Studies* **47**, 363–385.

Goldstein N.J., Vezich I.S. & Shapiro J.R. (2014) Perceived perspective taking: when others walk in our shoes. *Journal of Personality and Social Psychology* **106** (6), 941–960.

Goleman D. (2004) What makes a leader? *Harvard Business Review* **82** (1), 82–91.

Gunther M., Evans G., Mefford L. & Coe T.R. (2007) The relationship between leadership styles and empathy among student nurses. *Nursing Outlook* **55**, 196–201.

Hamilton B.A. & Schriesheim C.A. (2001) Leadership and Spirit: Breathing New Vitality and Energy Into Individuals and Organizations by Russ S. *Moxley reviewed in The Leadership Quarterly* **12** (3), 373–375.

Hayes A.F. (2013) *Introduction to Mediation, Moderation, and Conditional Process Analysis. A Regression-Based Approach*. The Guilford Press, New York .

Hofstede G. (1983) National cultures in four dimensions: a research-based theory of cultural differences among nations. *International Studies of Management and Organization*, **13** (1–2), 46–74.

Laschinger H.K., Wong C.A. & Grau A.L. (2012) The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: a cross-sectional study. *International Journal of Nursing Studies* **29** (10), 1266–1276.

Loon M., Lim Y.M., Lee T.H. & Tam C.L. (2012) Transformational leadership and job-related learning. *Management Research Review* **35** (3 & 4), 192–205.

Mahsud R., Yukl G. & Prussia G. (2010) Leader empathy, ethical leadership, and relations-oriented behaviours as antecedents of leader-member exchange quality. *Journal of Managerial Psychology* **25** (6), 561–577.

Neider L.L. & Schriesheim C.A. (2011) The Authentic Leadership Inventory (ALI): development and empirical tests. *The Leadership Quarterly* **22**, 1146–1164.

Niessen C., Sonnentag S. & Sach F. (2012) Thriving at work – a diary study. *Journal of Organizational Behaviour* **33**, 468–487.

Podsakoff P.M., MacKenzie S.B., Lee J.-Y. & Podsakoff N.P. (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* **88** (5), 879–903.

Pool I.A., Poell R.F. & ten Cate T.J. (2013) Perspectives on age and continuing professional development for nurses: a literature review. *Vocations and Learning* **6** (3), 297–321.

Porath C., Spreitzer G., Gibson C. & Garnett F.G. (2012) Thriving at work: toward its measurement, construct validation, and theoretical refinement. *Journal of Organizational Behavior* **33**, 250–275.

Preacher K.J. & Hayes A.F. (2004) SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers* **36**, 717–731.

Preacher K.J. & Leonardelli G.J. (2001) Calculation for the Sobel test: an interactive calculation tool for mediation tests.

Available at: http://quantpsy.org/sobel/sobel.htm accessed 24 February 2014.

Rego A., Godinho L., McQueen A. & Cunha M.P. (2010) Emotional intelligence and caring behaviour in nursing. *The Service Industries Journal* **30** (9), 1419–1437.

Sadri G. (2012) Emotional intelligence and leadership development. *Public Personnel Management* **41** (3), 535–548.

Shanta L. & Gargiulo L. (2014) A study of the influence of nursing education on development of emotional intelligence. *Journal of Profession Nursing* **30** (6), 511–520.

Shirom A. (2010) Vigor as a positive affect at work: conceptualizing vigor, its relations with related constructs, and its antecedents and consequences. *Review of General Psychology* **15** (1), 50–64.

Spector P.E. (2006) Method variance in organizational research: truth or urban legend? *Organizational Research Methods* **9** (2), 221–232.

Spreitzer G., Sutcliffe K., Dutton J., Sonenshein S. & Grant A.M. (2005) A socially embedded model of thriving at work. *Organization Science* **16** (5), 537–549.

Utriainen K., Ala-Mursula L. & Kyngäs H. (2014) Hospital nurses' wellbeing at work: a theoretical model. *Journal of Nursing Management* 'Online First' Published 2 January 2014 [Available from: 10.1111/jonm.12203].

Wong C.A. & Laschinger H.K.S. (2012) Authentic leadership, performance, and job satisfaction: the mediating role of empowerment. *Journal of Advanced Nursing* **69** (4), 947–959.

Wong C.-S. & Law K.S. (2002) The effects of leader and follower emotional intelligence on performance and attitude: an exploratory study. *The Leadership Quarterly* **13**, 243–274.

Wong C.A., Laschinger H.K.S. & Cummings G.G. (2010) Authentic leadership and nurses' voice behavior and perceptions of care quality. *Journal of Nursing Management* **18**, 889–900.

Yukl G. (2010) *Leadership in Organizations*. Prentice Hall, Upper Saddle River, NJ.