Received: 29 October 2019 | Revised: 22 July 2020 | Accepted: 30 July 2020

DOI: 10.1111/jonm.13118

ORIGINAL ARTICLE

WILEY

Transformational leadership, knowledge sharing and reflection, and work teams' performance: A structural equation modelling analysis

Veronika Anselmann Dr. Assistant Professor[1] | Regina H. Mulder Dr. Professor[2]

[1]Institute of Nursing Science, University of Education Schwaebisch Gmuend, Schwaebisch Gmuend, Germany

[2]Faculty of Human Sciences, University of Regensburg, Regensburg, Germany

Correspondence
Veronika Anselmann, Institute of Nursing Science, University of Education Schwaebisch Gmuend, Oberbettringerstraße 200, 73525 Schwäbisch Gmünd, Germany.
Email: veronika.anselmann@ph-gmuend.de

Abstract

Aim: The aim was to determine whether there are relationships among transformational leadership, safe team climate, knowledge sharing and reflection, and team performance in nursing and social work teams.

Background: Based on organisational learning theory, we hypothesized that transformational leadership could create a safe team climate that fosters knowledge sharing and reflection in teams and thus influences the performance of teams.

Methods: We conducted a cross-sectional study using questionnaires and validated scales to measure transformational leadership, safe team climate, knowledge sharing and reflection, and performance. The sample consisted of 32 teams ($N = 32$ teams, $n = 183$ team members).

Results: We conducted structural equation modelling. The results indicate that reflection positively relates with team performance, transformational leadership has a direct positive relationship with safe team climate, and safe team climate has positive relationships with knowledge sharing and reflection.

Conclusion: Our findings regarding transformational leadership's positive influence on teams in nursing and social work fill an important gap in the literature. The study's limitations are the use of self-reports and a small sample size.

Implications for nursing management: Our results indicate that transformational leadership can foster a safe climate in work teams and hereby team learning and performance.

KEYWORDS

knowledge sharing reflection, safe team climate, team performance, transformational leadership

1 | INTRODUCTION

Nursing leadership is an important factor in finding ways to cope with changing and demanding contexts (Scully, 2015). Research in the context of nursing has shown that transformational leadership can improve the quality of care and professional provision of care (Boamah, Laschinger, Wong, & Clarke, 2018).

Although research outcomes have indicated positive effects of transformational leadership (cf. Boamah et al., 2018), little is known about the latent creator of the relationship (Fischer, 2016;

Para-González, Jiménez-Jiménez, & Martínez-Lorente, 2018). We want to find out whether there are relationships among transformational leadership, safe team climate, knowledge sharing and reflection, and team performance in nursing and social work teams. Researchers emphasize that the 'mechanisms that could explain the correlations between transformational leaders and the work performance of staff are not yet known' (Krepia, Katsaragakis, Kaitelidou, & Prezerakos, 2018, p. 193).

Previous research on transformational leadership has studied different outcomes, such as job satisfaction (e.g., Park, 1997), intention to leave (e.g., Lavoie-Tremblay, Fernet, & Lavigne, 2016) and innovative work behaviour (e.g., Masood & Afsar, 2017). In the present study, we focus on team performance aspects such as the effectiveness of teams and their development of innovations. To our knowledge, there is no insight in research regarding explanations for the effects of transformational leadership. Team learning focuses on knowledge acquisition through participation and creation (Decuyper, Dochy, & Van den Bossche, 2010) and occurs when team members share information, build upon on mutually shared knowledge and expand the knowledge that they have exchanged (Raes, Boon, Kyndt, & Dochy, 2015). Studies indicate that knowledge sharing and reflection are important team learning activities for teams to improve their performance (Timmermans, van Linge, van Petegem, Elseviers, & Denekens, 2011). Team members' perception of a safe team climate is an important facilitator of learning activities in the team. A safe team climate allows team members to openly discuss problems, examine critical issues and find new solutions (Edmondson & Lei, 2014).

2 | TEAM LEARNING ACTIVITIES, ANTECEDENTS AND CONSEQUENCES

According to organisational learning theory (Argyris & Schön, 1978), learning happens when errors occur and are detected and corrected (Argyris, 1995). An error can be corrected by changing individual behaviour (single-loop learning) or by changing the underlying programme (double-loop learning). There are two kinds of action programmes: theories of individuals that refer to their beliefs, attitudes and values and theories-in-use that refer to their actual behaviour (Argyris, 1995). Ineffective theories-in-use reduce learning and sensitivity to feedback and thus create defensive organisational systems that are unable to learn (Argyris, 1990). Teams within an organisation enable learning because these units are the connection between the individual and the organisation (Argyris, 1995). A team learning model that describes relationships among variables on the individual, team, and organisational levels and their effects on team learning was developed by Decuyper et al. (2010). They referred to general system theory and complexity theory to emphasize a holistic view of organisational elements that interact in a dynamic way. Our study conceptualizes team learning processes as activities through which team members collectively reflect and share knowledge.

2.1 | Team learning activities: knowledge sharing and reflection

Decuyper et al. (2010, p. 112) define teams 'as complex open systems' in which team members are connected with each other and their environment. Work teams are groups of two or more persons (Salas, Sims, & Burke, 2005, p. 559). These persons need each other to accomplish their work tasks, and they share common values and goals (Salas et al., 2005). Ellis et al. (2003, p. 822) define team learning 'as a relatively change in a team's collective level of knowledge and skills produced by the shared experience of the team members'. Team learning activities, such as reflection and knowledge sharing, are cognitive intergroup processes that influence cognitive structures and thought patterns, which in turn affect behaviour (Gibson, 2001). The interrelation of actions in teams allows people to develop a collective mind (Weick & Roberts, 1993). Schippers, Den Hartog, and Koopman (2007, p. 191) define reflection of teams 'as a team's joint and overt exploration of work-related issues'. It includes team members' exploration, communication and discussion of work-related topics (Schippers et al., 2007). Researchers seem to agree that teams can learn effectively when they are able to identify their actual state and the ideal goal they want to reach (Schippers, West, & Dawson, 2015). Reflection within teams helps them focus on objectives, strategies, processes and their environment. It is a process of continuous adaptation of team members' shared understanding of work tasks, objectives and situations (Widmann, Messmann, & Mulder, 2016). With regard to reflection in teams, different dimensions have to be considered. Reflection can occur socially, in interaction between team members, or individually. In addition, it can vary regarding depth (Schippers et al., 2007). Schippers et al. (2007, p. 191) define 'moderate reflection' as critical reflection of issues closely related to the tasks and 'deep reflection' as reflection regarding norms and values of a team. Furthermore, the object (i.e.,content) of reflection can be different (Messmann & Mulder, 2015). In the present study, reflection is defined as socially shared learning activities that refer to processes within a team. In relation to the object of reflection, the focus is on task reflection and process reflection. Task reflection is about work tasks and different ways to accomplish them and reach objectives. Process reflection is a more impactful kind of reflection. It includes reflection activities such as revising and discussing work-related issues, including work performance, values and norms (Schippers et al., 2007).

2.2 | Transformational leadership

Bass and Riggio (2006, p. 21) argued that 'a superior leadership performance — transformational leadership — occurs when managers broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group and when they stir employees to look beyond their own self-interest for the good of the group'.

Transformational leadership is considered a second-order construct and consists of the following components (Bass, Avolio, Jung, & Berson, 2003):

1. *Idealized influence*, which means that followers trust and identify with their manager. The manager is respected by the team and is consistent in behaviour regarding values and norms that she or he demands from the followers.
2. *Inspirational motivation*, which can be described as a positive, motivating and enthusiastic team spirit. This includes providing meaning, challenging the followers' work and motivating them to imagine goal achievement in the future.
3. *Intellectual stimulation*, which refers to fostering innovativeness and creativity in team members. The manager questions routines and assumptions and reframes prior situations.
4. *Individualized consideration*, which refers to the manager's role of a mentor who coaches followers to foster their development. Transformational managers try to focus on the individual's needs, wishes and possibilities for development (Bass et al., 2003).

Theory on leadership indicates that three different levels of leadership can be distinguished. The first is the individual level of leadership activities, such as motivating, evaluating and inspiring others. The second is leadership at the team level, which focuses more on team processes and includes team building and conflict management. At the organisational level (the third level of leadership), leadership consists of creating a culture for the whole organisation (Huber, 2006). In the present study, the focus is on leadership of ward managers or team managers who can influence these three levels.

2.3 | Safe team climate

Team managers can be important for team members in two aspects. First, the team manager's behaviour can have direct consequences on the members' willingness to adapt to change and to learn (Edmondson, Bohmer, & Pisano, 2001). Second, team managers are important for creating a climate in a team where the members feel safe to take risks and where they trust and mutually respect each other (Edmondson & Lei, 2014). Such a safe team climate enables team members to integrate perspectives, share knowledge and work together effectively to achieve their goals (Cannon & Edmondson, 2001).

In the present study, safe team climate is regarded as the individual's perception of the team climate (Bauer & Mulder, 2011). A safe team climate is characterized by a non-punitive orientation and trust. In such a context, members of a team feel safe enough to engage in uncertain behaviours, such as discussing critical incidents, because they rely on support from the manager and the other members of the team (Bauer & Mulder, 2011).

2.4 | Team performance

Team learning activities are important for organisations to improve performance (e.g., Edmondson & Lei, 2014). In the present study, team performance was conceptualized as an output indicator, and the performance indicators of effectiveness and innovativeness were used (Van Woerkom & Croon, 2009). This study was conducted in the domains of nursing and social work. Health care systems have undergone structural changes and come to use indicators for performance that are similar to other domains, such as team effectiveness (Heinemann & Zeiss, 2002). Wageman, Hackman, and Lehman (2005) defined team effectiveness as a high-quality performance that meets the goals and expectations of both customers and team members. Innovativeness is another important performance indicator for teams (Timmermans et al., 2011). Innovativeness is defined as 'the introduction of new ideas and processes that are implemented to improve performance of a team' (Van Woerkom & Croon, 2009, p. 562).

2.5 | Conceptualization of variables

The relation between transformational leadership, team learning and team performance is theoretically grounded in theories on learning organisations (e.g., Senge, 1992). Senge (2014) argues that a learning organisation consists of five components: personal mastery, mental models, shared vision, team learning and system thinking. Bass (2000) states that transformational leadership contributes to the maintenance of the learning organisation. Leadership in learning organisations includes transformational leadership because this leadership style 'raises the awareness of constituencies about what is important, increase concerns for achievement, self-actualization and ideals' (Bass, 2000, p. 21). This involves the individual employee, the team, the organisation and the community (Bass, 2000). Building a learning organisation requires a safe team climate and transformational leadership that encourage people to share ideas and ask for help (Senge, 1992). Team learning is an integral part of Senge's learning organisations. It is described as the possibility of team members to share information and discuss. This can lead to organisations that are able to react flexibly and therefore are able to improve performance (Senge, 1992).

The aim of this study was to investigate whether there are relationships among transformational leadership, safe team climate, knowledge sharing and reflection, and team performance in nursing and social work teams. We expect that transformational leadership positively relates to the individual's perception of a safe team climate (Hypothesis 1). We hypothesize that transformational leadership positively relates to knowledge sharing and reflection via the individual's perception of a safe team climate (Hypothesis 2). Furthermore, we expect that the individual's perception of a safe team climate positively relates to knowledge sharing and reflection (Hypothesis 3). Lastly, we hypothesize that knowledge sharing and reflection positively relate to a team's performance (Hypothesis 4).

3 | METHODS

3.1 | Sample

Participation in our study was voluntary and anonymous. Regarding the criteria for participation in our study, participants needed to

TABLE 1 Overview of the used scales in the questionnaire with item examples, mean values (*M*), standard deviation (*SD*) and Cronbach alpha (α)

Scales (number of items)	Item examples	*M*	*SD*	α	1	2	3	4	5	6
1 Transformational leadership (7)	The team leader communicates a clear and positive vision of the future.	4.04	0.92	0.93	-					
	The team leader treats staff as individuals, supports and encourages their development.									
2 Knowledge sharing (7)	People in this team are willing to share knowledge/ideas with others.	4.02	0.83	0.88	0.41**	-				
	People in this team keep their best ideas to themselves (reverse coded).									
3 Task reflection (10)	During task execution, we stop to assess whether the team is on the right track.	3.95	0.68	0.92	0.35**	0.75**	-			
	We check whether our activities produced the expected results.									
4 Process reflection (7)	The team often reviews its objectives.	3.74	0.78	0.87	0.28**	0.61**	0.80**	-		
	We regularly discuss whether the team is working effectively.									
5 Safe team climate (8)	There is a trustful relationship between the colleagues on my ward.	4.23	0.80	0.85	0.52**	0.53**	0.53**	0.45**	-	
	Colleagues treat each other in a fair manner.									
6 Team effectiveness (4)†	Our team achieves its objectives.	4.23	0.68	0.80	0.33**	0.40**	0.48**	0.51**	0.48**	-
	The clients (internal or external) of this team are satisfied.									
7 Team innovativeness (4)†	Our teams develop new concepts.	3.77	0.77	0.78	0.34**	0.41**	0.52**	0.52**	0.46**	0.54**
	Our team develops new products or services.									

Note: 5-point Likert scale: 1 = strongly disagree/never 5 = strongly agree/very often

†7-point Likert scale: 1 = strongly agree 7 = strongly disagree;

*$p < .05$; 1 = transformational leadership, 2 = knowledge sharing, 3 = task reflection, 4 = process reflection, 5 = safe team climate and 6 = team effectiveness.

**$p < .01$;

work together in teams with at least two members who shared a common task in nursing or social work (e.g., teams working with people with disabilities) to be eligible to participate in the study. Typically, their daily work consists of complex tasks that are solved by working together in teams (Timmermans et al., 2011). We used simple random sampling and collected our data in Bavaria, Germany. We contacted organisations via email or telephone and introduced a contact person (e.g., ward manager, manager of nursing, team manager, organisation manager) to our study, in particular about the criteria for participation, our study's focus and our approach to data protection. We asked the contact person if the team fulfils our criteria. If yes, we then asked the contact person to distribute the questionnaire to their colleagues, team members or employees. Participating teams worked in inpatient care (e.g., retirement home) and in-house support in social work (e.g., sheltered workshop). Participating teams worked in 12 different organisations engaged in nursing and social care. The questionnaire contained an introduction part where participants were informed that participation is voluntary, data collection and data analyses are anonymous, and no identifying information about their organisation will be collected. Data of an individual team member cannot be retraced.

3.2 | Research design

We conducted a cross-sectional questionnaire survey with validated scales to measure the variables of transformational leadership, safe team climate, reflection and knowledge sharing, and team performance. Based on our theoretical framework, the used scales are an appropriate operationalization of the constructs.

3.3 | Scales

Transformational leadership is measured using the Global Transformational Leadership (GTL) scale (Carless, Wearing, & Mann, 2000, p. 389), which contains items about communication of a clear and positive vision, support for staff development, encouragement of staff, fostering of trust, involvement and cooperation, encouragement of thinking about problems, and behaviour that is respectful and inspiring and congruent to values (Carless et al., 2000). The answering format was a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*).

Nurses and social workers assessed the leadership style of their ward managers or team managers. We focused on leadership of ward managers and team managers at the operational level because research indicates that they have an important influence on the organisation of services, patient outcomes and staff shortage (Aiken et al., 2012).

For measuring knowledge sharing, the validated scale from Staples and Webster (2008) was used. This scale measures the team members' individual perceptions of sharing knowledge, ideas, experience and expertise among the team members. The response format was a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*). Reflection was measured with a scale developed by Schippers et al. (2007). This scale contains two components of reflection activities: reflection activities about work tasks and strategies for accomplishing those tasks (task reflection) and reflection activities about discussing processes, values and norms of the team (process reflection) (Schippers et al., 2007). The answering format for these scales was a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*).

Van Woerkom and Croon (2009) developed an instrument that measures different types of team performance. To cover different perspectives on performance, we included the scales on the teams' effectiveness and innovativeness of the validated instrument. The answer format for these scales was a 7-point Likert scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*).

The scale that we used for measuring safe team climate was developed by Bauer and Mulder (2011). It measures individual team members' perception of feeling safe for taking interpersonal risk within their own team. The scale items are about non-punitive handling of critical moments (e.g., occurrence of errors) and trust. The scale has been used in different domains, such as hospital nursing and geriatric nursing (e.g., Bauer & Mulder, 2011), and is therefore applicable for the context of the present study. The answer format was a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.4 | Analyses

We calculated descriptive statistics and performed correlation analyses (Table 1). To analyse the relationships among transformational leadership, safe team climate, knowledge sharing and reflection and team performance, we conducted structural equation modelling using Mplus 6 (Muthén & Muthén, 1998–2013). In the model, reflection was specified as a second-order variable comprising the factors task reflection and process reflection. The same procedure was used for team performance. The second-order variable comprised the two performance indicators, namely effectiveness and innovativeness.

In our study, individual team members assessed the learning activities, knowledge sharing and reflection of the team, transformational leadership and team performance. The team members' individual assessments require data analyses at the individual level. To take into account that team members are nested in teams, we used an approach that analyses complex data at the single level while considering clustering effects with regard to the study's sampling design (cf. Marcoulides & Schumacker, 2009). This approach enables computing standard errors and a chi-square test of model fit taking into account stratification and non-independence of observations because of cluster sampling (Muthén & Muthén, 2012). To account for the hierarchical data structure, stratification and cluster information were included. We were able to obtain robust parameter estimates and standard errors and account for the associated unequal selection probabilities (Stapleton, 2006). To test the validity of the model to the present sample, standard fit indices and cut-off criteria were

used, with SRMR ≤ 0.10, CFI ≥ 0.90 and RMSEA ≤ 0.08 indicating acceptable fit (cf. Kline, Muthén & Muthén, 2012). To account for the non-normality of the data, the restricted maximum-likelihood estimator method was used. In addition, indirect effects were computed and tested with regard to statistical significance and the direction and size of the effects.

4 | RESULTS

The total sample in our study consisted of 32 teams (N = 32 teams, n = 183 team members); 82 per cent of our particiapants were female. Participants were aged between 18 and 60 years (M = 40.78, SD = 11.77) and had worked in their team for at least 2 months (M = 40.8, SD = 39.5). 54 per cent of teams (17 teams) worked in the domain of geriatric nursing and 46 per cent (15 teams) in social work, such as youth welfare service or pedagogical care of young people with physical or mental disabilities. The teams had two to ten team members (M = 6.92, SD = 1.91). 27 per cent of the teams worked for profit organisations and 73 per cent for non-profit organisations.

Table 1 gives an overview of the mean values, standard deviations and Cronbach's alphas. The scales are appropriate and have been used in other studies with Cronbach's alphas for transformational leadership (α = 0.90) (Carless et al., 2000), knowledge sharing (α = 0.86) (Staples & Webster, 2008), reflection (α = 0.79) (Schippers et al., 2007), safe team climate (α = 0.85) (Bauer & Mulder, 2011) and performance (α = 0.91) (Van Woerkom & Croon, 2009). In the present study, Cronbach's alphas were satisfying for transformational leadership (α = 0.92) and knowledge sharing (α = 0.88). Reflection was specified as second-order variable comprising task reflection and process reflection (α = 0.68–0.78). Team performance consists of effectiveness and innovativeness of teams (α = 0.68 –0.77).

Our model (Figure 1) shows an acceptable fit to the data (SRMR = 0.06, CFI = 0.91, RMSEA = 0.08, 90% C.I. = 0.06–0.09). The results of our structural equation modelling indicate that transformational leadership has a direct relationship with safe team climate (β = 0.60), which is consistent with Hypothesis 1. Transformational leadership also relates to knowledge sharing (β = 0.53) and reflection (β = 0.50) positively via safe team climate. These results support Hypothesis 2. Safe team climate positively relates to knowledge sharing (β = 0.80) and reflection (β = 0.83), which supports Hypothesis 3. The results also show that there is a positive relationship between reflection within the team and team performance (β = 0.70). There is no significant relationship between knowledge sharing and team performance. Therefore, Hypothesis 4 was partially supported.

The results indicate that transformational leadership has a positive indirect relation with knowledge sharing and reflection through safe team climate, transformational leadership positively relates to safe team climate, reflection positively relates to team performance, and knowledge sharing is not related to team performance.

5 | DISCUSSION

Our results are in line with the research results on transformational leadership in the domains of nursing (cf. Lega, Prenestini, & Rosso, 2017). Studies indicate that transformational leadership styles can positively influence outcomes for nurses and health care workforces (Lega et al., 2017), positively influence patient safety outcomes (Boamah et al., 2018) and enhance patient satisfaction (Wong, Cummings, & Ducharme, 2013). Our findings suggest that it is necessary to use transformational leadership styles to create 'empowering nursing work environments' (Boamah et al., 2018, p. 6). Wong et al. (2013, p. 718) argued that focusing on the 'mechanism

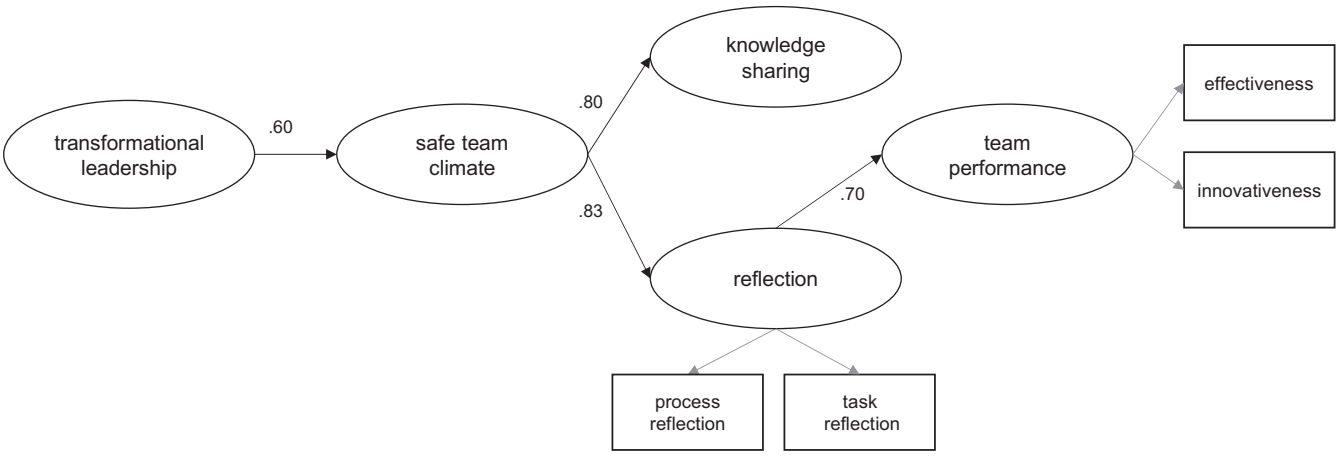

FIGURE 1 Standardized estimates for the mediation model of transformational leadership, team learning and team performance (N = 32; n = 183 team member); standardized β included; transformational leadership—safe team climate (B = 0.45); safe team climate—knowledge sharing (B = 0.71), reflection (B = 0.58); reflection—team performance (B = 0.38); indirect effects: transformational leadership—knowledge sharing β = 0.53; transformational leadership—reflection β = 0.50; all estimates p < .05; model fit: SRMR = 0.06; CFI = 0.91; RMSEA = 0.08; partial model fit: SRMR = 0.07; CFI = 0.79 RMSEA = 0.08

of influence on outcomes' is necessary. The present study increases insight into this mechanism and shows that transformational leadership is positively related to the learning activities of teams and influences team performance. Therefore, we conclude that nurses' work environments should contain learning opportunities. Whereas other studies focused on specific outcome measures (e.g., patient safety outcomes) (Boamah et al., 2018), this study increases insight into nurses' subjective assessment of their team performance.

One of the limitations of our study is that we used team members' self-reports for team performance and transformational leadership; therefore, the results may suffer from potential biases (D'Innocenzo et al., 2016). Furthermore, our sample size was relatively small. A strength of our study is that we used an approach that analysed individual assessments considering that individuals are nested in groups.

6 | CONCLUSION

The results and implications of this present study increase insight into the underlying mechanisms of transformational leadership in nursing and social care. Our results can help ward managers and team managers to become aware that leadership can have a positive impact on team performance when they foster a safe team climate. Furthermore, for individual employees and team members as well as for teams, it is important to become aware of the fact that learning is essential for improving performance. In addition, for organisations, it is important to become aware of the fact that performance is influenced by ward managers and team managers, teams, a safe climate and learning.

6.1 | Implications to nursing management

The practical implications of our study also relate to the importance of leadership behaviour. Team managers behaving as transformational leaders are able to create a safe team climate which enhances learning and thus improves outcomes.

The conclusions of our study are important for leadership education. Future ward managers and team managers should not only learn how to establish a leadership style, but also should seek to understand how leadership style can lead to a safe team climate and how learning possibilities can be arranged for their employees. It is necessary to train future ward managers and team managers not only in leadership style, but also in enabling learning, creating a team climate and in being able to guide their own professional development. Further studies should focus on these suggestions by including informal learning activities and leadership style.

ACKNOWLEDGEMENTS

Open access funding enabled and organized by Projekt DEAL.

ORCID

Veronika Anselmann https://orcid.org/0000-0001-5246-442X
Regina H. Mulder https://orcid.org/0000-0001-5088-6119

REFERENCES

Aiken, L. H., Sermeus, W., Van den Heede, K., Sloane, D. M., Busse, R., McKee, M., … Kutney-Lee, A. (2012). Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*, *344*, e1717. https://doi.org/10.1136/bmj.e1717

Argyris, C. (1990). *Overcoming Organizational Defenses: Facilitating Organizational Learning*. Allyn & Bacon.

Argyris, C. (1995). Action science and organizational learning. *Journal of Managerial Psychology*, *10*(6), 20–26. https://doi.org/10.1108/02683949510093849

Argyris, C., & Schön, D. A. (1978). *Organizational Learning: A Theory of Action Perspective*, Menlo Park, CA, London: . Reading, Mass.

Bass, B. M. (2000). The future of leadership in learning organizations. *Journal of Leadership Studies*, *7*(3), 18–40. https://doi.org/10.1177/107179190000700302

Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, *88*(2), 207–218. https://doi.org/10.1037/0021-9010.88.2.207

Bass, B. M., & Riggio, R. E. (2006). *Transformational Leadership*, London: Lawrence Erlbaum Associate Publishers.

Bauer, J., & Mulder, R. H. (2011). Engagement in learning after errors at work: Enabling conditions and types of engagement. *Journal of Education and Work*, *26*(1), 1–21. https://doi.org/10.1080/13639080.2011.573776

Boamah, S. A., Laschinger, H. K. S., Wong, C., & Clarke, S. (2018). Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nursing Outlook*, *66*(2), 180–189. https://doi.org/10.1016/j.outlook.2017.10.004

Cannon, M. D., & Edmondson, A. C. (2001). Confronting failure: Antecedents and consequences of shared beliefs about failure in organizational work groups. *Journal of Organizational Behavior*, *22*(2), 161–177. https://doi.org/10.1002/job.8

Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, *14*(3), 389–405. https://doi.org/10.1023/A:1022991115523

D'Innocenzo, L., Mathieu, J. E., & Kukenberger, M. R. (2016). A meta-analysis of different forms of shared leadership–team performance relations. *Journal of Management*, *42*(7), 1964–1991. https://doi.org/10.1177/0149206314525205

Decuyper, S., Dochy, F., & Van den Bossche, P. (2010). Grasping the dynamic complexity of team learning: An integrative model for effective team learning in organizations. *Educational Research Review*, *5*, 111–133. https://doi.org/10.1016/j.edurev.2010.02.002

Edmondson, A. C., Bohmer, R. M., & Pisano, G. P. (2001). Disrupted routines: Team learning and new technology implementation in hospitals. *Administrative Science Quarterly*, *46*, 685–716. https://doi.org/10.2307/3094828

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 23–43. https://doi.org/10.1146/annurev-orgpsych-031413-091305

Ellis, A. P., Hollenbeck, J. R., Ilgen, D. R., Porter, C. O., West, B. J., & Moon, H. (2003). Team learning: Collectively connecting the dots. *Journal of Applied Psychology*, *88*(5), 821–835. https://doi.org/10.1037/0021-9010.88.5.821

Fischer, S. A. (2016). Transformational leadership in nursing: A concept analysis. *Journal of Advanced Nursing*, *72*(11), 2644–2653. https://doi.org/10.1111/jan.13049

Gibson, C. B. (2001). From knowledge accumulation to accommodation: Cycles of collective cognition in work groups. *Journal of Organizational Behavior*, *22*(2), 121–134. https://doi.org/10.1002/job.84

Heinemann, G. D., & Zeiss, A. M. (2002). *Team performance in health care: Assessment and development*. Berlin, Germany: Springer Science & Business Media.

Huber, D. (2006). *Leadership and Nursing Care Management*, 3rd edn.Philadelphia, PA: Saunders Elsevier.

Krepia, V., Katsaragakis, S., Kaitelidou, D., & Prezerakos, P. (2018). Transformational leadership and its evolution in nursing. *Progress in Health Sciences*, *8*(1), 189–194. https://doi.org/10.5604/01.3001.0012.1114

Lavoie-Tremblay, M., Fernet, C., Lavigne, G. L., & Austin, S. (2016). Transformational and abusive leadership practices: impacts on novice nurses, quality of care and intention to leave. *Journal of Advanced Nursing*, *72*(3), 582–592.

Lega, F., Prenestini, A., & Rosso, M. (2017). Leadership research in healthcare: A realist review. *Health Services Management Research*, *30*(2), 94–104. https://doi.org/10.1177/0951484817708915

Marcoulides, G. A., & Schumacker, R. E. (2009). *New developments and techniques in structural equation modeling*. London, UK: Lawrence Erlbaum Associates.

Masood, M., & Afsar, B. (2017). Transformational leadership and innovative work behavior among nursing staff. *Nursing Inquiry*, *24*(4), e12188. https://doi.org/10.1111/nin.12188

Messmann, G., & Mulder, R. H. (2015). Reflection as a facilitator of teachers' innovative work behavior. *International Journal of Training and Development*, *19*(2), 125–137. https://doi.org/10.1111/ijtd.12052

Muthén, L. K., & Muthén, B. O. (2012). *Mplus User's Guide (Sixth Edition)*. Muthén & Muthén.

Para-González, L., Jiménez-Jiménez, D., & Martínez-Lorente, A. R. (2018). Exploring the mediating effects between transformational leadership and organizational performance. *Employee Relations*, *49*(2), 412–432. https://doi.org/10.1108/ER-10-2016-0190

Park, H. T. (1997). Transformational and transactional leadership styles of the nurse administrators and job satisfaction, organizational commitment in nursing service. *The Journal of Nurses Academic Society*, *27*(1), 228–241. https://doi.org/10.4040/jnas.1997.27.1.228

Raes, E., Boon, A., Kyndt, E., & Dochy, F. (2015). Measuring team learning behaviours through observing verbal team interaction. *Journal of Workplace Learning*, *27*(7), 476–500. https://doi.org/10.1108/JWL-01-2015-0006

Salas, E., Sims, D. E., & Burke, C. S. (2005). Is there a "big five" in teamwork? *Small Group Research*, *36*(5), 555–599. https://doi.org/10.1177/1046496405277134

Schippers, M., Den Hartog, D., & Koopman, P. (2007). Reflexivity in teams: A measure and correlates. *Applied Psychology: An International Review*, *56*(2), 198–211. https://doi.org/10.1111/j.1464-0597.2006.00250.x

Schippers, M. C., West, M. A., & Dawson, J. F. (2015). Team reflexivity and innovation: The moderating role of team context. *Journal of Management*, *41*(3), 769–788. https://doi.org/10.1177/0149206312441210

Scully, N. J. (2015). Leadership in nursing: The importance of recognising inherent values and attributes to secure a positive future for the profession. *Collegian*, *22*(4), 439–444. https://doi.org/10.1016/j.colegn.2014.09.004

Senge, P. (1992). Building learning organizations. *The Journal for Quality and Participation*, *15*(2), 30.

Senge, P. M. (2014). *The fifth discipline fieldbook: Strategies and tools for building a learning organization*, Auckland: Crown Business.

Staples, D. S., & Webster, J. (2008). Exploring the effects of trust, task interdependence and virtualness on knowledge sharing in teams. *Information Systems Journal*, *18*(6), 617–640. https://doi.org/10.1111/j.1365-2575.2007.00244.x

Stapleton, L. M. (2006). Using multilevel structural equation modeling techniques with complex sample data. G. R. Hancock & O. E. Mueller *Structural Equation Modeling: A Second Course*, 345–383.Greenwich: Information Age Publishing.

Timmermans, O., van Linge, R., van Petegem, P., Elseviers, M., & Denekens, J. (2011). Team learning and team composition in nursing. *Journal of Workplace Learning*, *23*(4), 258–275. https://doi.org/10.5430/jnep.v2n4p10

Van Woerkom, M., & Croon, M. (2009). The relationship between team learning activities and team performance. *Personnel Review*, *38*(5), 560–577. https://doi.org/10.1108/00483480910978054

Wageman, R., Hackman, J. R., & Lehman, E. (2005). Team diagnostic survey: Development of an instrument. *The Journal of Applied Behavioral Science*, *41*(4), 373–398. https://doi.org/10.1177/0021886305281984

Weick, K. E., & Roberts, K. H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 357–381.

Widmann, A., Messmann, G., & Mulder, R. H. (2016). The impact of team learning behaviors on team innovative work behavior: A systematic review. *Human Resource Development Review*, *15*(4), 429–458. https://doi.org/10.1177/1534484316673713

Wong, C. A., Cummings, G. G., & Ducharme, L. (2013). The relationship between nursing leadership and patient outcomes: A systematic review update. *Journal of Nursing Management*, *21*(5), 709–724. https://doi.org/10.1111/jonm.12116

How to cite this article: Anselmann V, Mulder, R.H. Transformational leadership, knowledge sharing and reflection, and work teams' performance: A structural equation modelling analysis. *J Nurs Manag*. 2020;28:1627–1634. https://doi.org/10.1111/jonm.13118