The mediating effects of team and self-efficacy on the relationship between transformational leadership, and job satisfaction and psychological well-being in healthcare professionals: A cross-sectional questionnaire survey

Karina Nielsen a, Joanna Yarker b,*, Raymond Randall c, Fehmidah Munir d

a National Research Centre for the Working Environment, Denmark
b Department of Psychology, Goldsmiths, University of London, New Cross, London SE14 7NW, UK
c Department of Psychology, Leicester University, UK
d Department of Human Sciences, Loughborough University, UK

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ABSTRACT

Background: The importance of transformational leadership for the health and well-being of staff in the healthcare sector is increasingly acknowledged, however, there is less knowledge about the mechanisms that may explain the links between transformational leaders and employee health and well-being.

Objectives: To examine two possible psychological mechanisms that link transformational leadership behaviours to employee job satisfaction and well-being.

Design: Cross-sectional study design.

Settings: The study took place in two elderly care centers in large Danish local government. Staff were predominantly healthcare assistants but also nurses and other healthcare-related professions participated in the study.

Participants: 274 elderly care employees completed the questionnaire. Surveys were sent to all employees working at the centers. 91% were female, the average age was 45 years.

Methods: A questionnaire was distributed to all members of staff in the elderly care centers and where employees were asked to rate their line manager's leadership style and were asked to evaluate their own level of self-efficacy as well as the level of efficacy in their team (team efficacy) and their job satisfaction and psychological well-being.

Results: Both team and self-efficacy were found to act as mediators, however, their effects differed. Self-efficacy was found to fully mediate the relationship between transformational leadership and well-being and team efficacy was found to partially mediate the relationship between transformational leadership and job satisfaction and fully mediate the relationship between transformational leadership and well-being.

Conclusions: Within the pressurised environment faced by employees in the healthcare sector today transformational leaders may help ensure employees' job satisfaction and psychological well-being. They do so through the establishment of a sense of being in control as individuals but also as being part of a competent group.

What is already known about the topic?

- Transformational leadership is increasingly encouraged in nursing and healthcare environments to promote job satisfaction, commitment and well-being.
• Clear associations between transformational leadership and job satisfaction and psychological well-being have been reported.
• Self-efficacy is an important psychological mechanism that has been found to mediate the relationship between transformational leadership and job satisfaction and general well-being in non-healthcare settings.

What this paper adds

• The role of team and self-efficacy are examined simultaneously.
• Team and self-efficacy were found to fully mediate the relationship between transformational leadership and well-being.
• Team efficacy, but not self-efficacy was found to partially mediate the relationship between transformational leadership and job satisfaction.
• Highlights efficacy as an important psychological mechanism in the link between leadership, well-being and job satisfaction.

1. Introduction

Transformational leadership has received increasing attention within healthcare, particularly within nursing, and has been promoted as a leadership style that will both facilitate change and increase job commitment, job satisfaction and well-being within teams (Sofarelli and Brown, 1998; Thyer, 2003). A substantial body of literature has demonstrated links between transformational leadership and a range of work outcomes particularly job satisfaction and well-being (Medley and Larochelle, 1995; Nielsen et al., 2008a,b). However, little is known about the psychological mechanisms through which this relationship occurs. Efficacy, or the individual’s confidence in their ability to do the job, is the possible mechanism explored here. It is hypothesised that leadership may exert its influence through employees’ appraisals of themselves (self-efficacy) or their colleagues (team-efficacy). This study aims to explore the relative contribution of team and self-efficacy in explaining the relationship between transformational leadership and well-being and job satisfaction.

2. Background

2.1. Transformational leadership

Transformational leaders are those who ‘broaden and elevate the interests of their followers, generate awareness and commitment of individuals to the purpose and mission of the group, and they enable subordinates to transcend their own self-interests for the betterment of the group’ (Seltzer et al., 1989, p. 174). Such leaders provide personal attention, promote development through individualised consideration, enable new ways of working, encourage novel problem-solving, and provide coaching and encouragement of specific behaviours in workers through intellectual stimulation (Sashkin and Rosenbach, 1993; Bass, 1999). It is argued that transformational leaders have particular importance within the healthcare sector (Morrison et al., 1997; Corrigan and Garman, 1999; Dunham-Taylor, 2000). Healthcare workers are in close contact with patients and thus they are the first to notice changes in their health and can most easily assess their needs and address problems. As a result, leaders who encourage employees to solve problems and take responsibility are needed in healthcare (Dunham-Taylor, 2000). It has been argued that raising employees’ exposure to transformational leaders is the key to improving healthcare provision in the future (Sofarelli and Brown, 1998; Thyer, 2003). In addition, transformational, or ‘inspiring’, leadership behaviour can also influence employee well-being, an important factor when considering the healthcare sector is one of the occupations identified as being particularly stressful (McVicar, 2003). Transformational leadership may be of particular importance in the provision of elderly care services. In Denmark, elderly care is either carried out in care homes or in the homes of the elderly. In these environments, especially where care is provided in the home, leaders are not in direct contact with patients and thus rely on healthcare assistants to report on changes in clients’ health. Furthermore, the transformational leadership style may be of particular importance in Denmark, where new public management strategies mean that healthcare assistants are responsible for contacting other healthcare professionals who decide on the range of services offered to the individual patient. As such healthcare assistants represent the link between patients and the wider healthcare system.

A number of studies have reported strong associations between transformational leadership style and organizational health such as increased job satisfaction (Podsakoff et al., 1990; Morrison et al., 1997; Shieh et al., 2001; Bono and Judge, 2003; Berson and Linton, 2005), and lower levels of work-related stress (Sosik and Godshalk, 2000) and burnout (Seltzer et al., 1989; Corrigan et al., 2002; Hetland et al., 2007). Fewer studies have examined the mechanisms that may help explain this relationship. Nielsen et al. (2008a,b) found work characteristics to mediate the relationship between transformational leadership and well-being but less research has focused on the psychological mechanism that may explain this relationship, i.e. how do transformational leaders affect individuals’ cognitions. Turner et al. (2004) argue that transformational leaders provide the potential for healthy work, particularly within a team-based context, by increasing a greater sense of self-efficacy and mastery in perceived control, employee role orientations and greater trust in management. In turn, these positive psychological processes and mechanisms will result in healthy outcomes such higher levels of psychological well-being. This study aims to extend our understanding of the role of efficacy as a mediator of the relationship between transformational leadership and well-being and satisfaction.

2.2. Self-efficacy

Self-efficacy, derived from Bandura’s (1997) socio-cognitive model, refers to one’s belief about his or her ability and capacity to accomplish a task or cope with
environmental demands. Within the work context, self-efficacy is usually measured as one's self-appraisal of their ability to cope with work demands, given the resources they possess (Bandura, 1997). For example, those with high self-efficacy are more likely to undertake a proactive approach when faced with stressful situations at work and carry out a broader set of role responsibilities than those with low self-efficacy (Parker, 1994; Jex et al., 2001). Self-efficacy beliefs also play a major role in psychological and physical health outcomes. For example, those with high self-efficacy are more likely to report lower levels of perceived stress, and high self-efficacy has been shown to modulate the physiologic stress response, which exerts direct influence on a variety of health outcomes such as blood pressure rates and cardiovascular heart disease (O'Leary, 1992). Within the occupational literature, low self-efficacy is related to high levels of depression and anxiety (Jex and Dudanowski, 1992), and high self-efficacy predicts job satisfaction and moderates the relationship between work-related stress and well-being (Jex and Bliese, 1999; Stetz et al., 2006). Further, high self-efficacy has been shown to be related to higher job satisfaction and lower turnover intentions among nurses (Zellars et al., 2001).

Bandura (2000a,b) argues that supportive relationships can enhance self-efficacy through modelling attitudes and strategies for managing problems, and providing resources for coping. In line with this, associations have been found between transformational leadership and self-efficacy (Schyns, 2001; Kark and Dijk, 2007). Importantly, self-efficacy is reported to mediate the relationship between transformational leadership and work outcomes such as job satisfaction and organizational commitment well-being (Dvir and Shamir, 2003; Avolio et al., 2004; Pillai and Williams, 2004). This theoretical framework of efficacy can also be applied to transformational leadership and psychological well-being and job satisfaction.

2.3. Team efficacy

Teamwork organization has been advocated as a way of designing work which may optimise patient care in healthcare systems (West and Markiewicz, 2004). A recent review on teamwork definitions in healthcare research suggested teamwork in healthcare to be “a dynamic process involving two or more health professions with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning or evaluating patient care. This is accomplished through interdependent collaboration, open communication and shared decision-making. This in turn generates value-added patient, organizational and staff outcomes.” (Xyrichis and Ream, 2008, p. 238).

Healthcare studies have found that teamwork reduce levels of medical errors (Wilson et al., 2005) and reduce patient mortality (West et al., 2002). However, there is an increasing awareness of that in order to achieve the beneficial effects of teamwork, teams must be well-functioning (IOM, 2004). Employees' perception of efficacy at the team level has been one aspect of effective teamwork (Chen et al., 2007). Team efficacy refers to the individuals' assessment of the group's or team's collective ability to organize and execute the courses of action (Gully et al., 2002). Although the term collective efficacy has also been used, in this study we refer to team efficacy to specify the level of interest. Team efficacy is not only the sum of efficacy beliefs of individual members of the team (Bandura, 2000a,b); the cognition “can I do this task” (self-efficacy) differs from the cognition “can we do this task” (team efficacy) (Mischel and Northcraft, 1997). Team efficacy involves complex interactions and reciprocal influence of team members' motivation, beliefs and performance more than does individual self-direction (Gully et al., 2002). The links between team efficacy and performance outcomes is well researched (see Gully et al., 2002; Chen et al., 2007). For example, it has been found to predict motivation (Gully et al., 2002); goal commitment (Zellars et al., 2001); and training and team performance (Brown, 2003; Marks, 1999). There is some research that indicates that team efficacy is associated with job satisfaction (Jex and Bliese, 1999; Jex and Thomas, 2003). Moreover, in a study of nurses, Zellars et al. (2001) identified that after controlling for self-efficacy, team efficacy was associated with outcomes including job satisfaction and turnover intentions. However, less is known about the correlates of team efficacy and well-being.

It has been proposed that transformational leadership may lead to team efficacy through the process of engaging collective motivation and encouraging the team members to identify with the group (Kark and Shamir, 2002), recognizing members' contributions and cooperation on tasks and encouraging team members to relate to strategic aims or the bigger picture (Brewer and Gardner, 1996). A recent study found that over time transformational leadership does enhance collective efficacy in teams (Chen and Lee, 2007). In a study conducted by Walumbwa et al. (2004) collective efficacy was found to partially mediate the relationship between transformational leadership and satisfaction and commitment. However, less is known about the role team efficacy plays in the relationship between leadership and well-being outcomes. Furthermore, the relative contributions of team and self-efficacy in explaining the relationship between transformational leadership and job satisfaction and well-being have not been explored. It might be that team and self-efficacy operate in different ways, and are enhanced by different aspects of leadership and have different outcomes. Through understanding how the mechanisms of team and self-efficacy operate we will be better able to develop efficacy within the workplace and design interventions appropriately targeted at the individual, team or leadership level. This paper aims to address this gap.

2.4. Mediational interference

Mathieu and Taylor (2006) argued that it is important to clarify which type of mediational inference is tested. They distinguish between three types: (i) indirect effects, where no direct relationship exists between the independent and the dependent variable, (ii) partial mediation, where a direct relationship is present together with the
mediated effect, and (iii) a fully mediated model, where the previously direct relationship no longer exists after the mediator is introduced into the model. As the relationships between transformational leadership and job satisfaction and well-being have been confirmed previously, we proposed either the second or the third mechanism to be present in our model: that transformational leadership will be associated with the way in which employees perceive ability (self-efficacy) or the team’s joint ability (team efficacy) in coping with work demands. This perception would, in turn, be associated with employees’ self-reports of job satisfaction and well-being.

2.5. Conceptual framework

To summarise, previous research has found (a) links between transformational leadership and efficacy and (b) transformational leadership and employee job satisfaction and well-being. However, to our knowledge there have yet not been any studies that have investigated whether this relationship is mediated through self-efficacy and team efficacy. In order to understand how transformational leadership styles relate to employee job satisfaction and well-being it is important to understand the psychological mechanisms that may explain this relationship. It may be that transformational leadership is primarily related to the individual’s evaluation of his/her own competencies and ability to cope with challenges in the workplace which in turn then is associated with employee levels of job satisfaction and well-being, however, it may also be that transformational leadership is also related to how employees perceive their colleagues. A strong sense of team efficacy may contribute to a positive interpersonal climate and greater cooperation and therefore be related to higher levels of job satisfaction and well-being in followers. This may be of particular importance in healthcare settings where teamwork is perceived to be of particular importance (e.g. West et al., 2002). It therefore still remains to be examined how transformational leadership styles may be related to employees’ cognitive appraisal of efficacy—whether this relationship is at the individual level or also at the collective team level. This study aims to build on previous research by testing the following three hypotheses:

**Hypotheses 1.** The relationship between transformational leadership and well-being and job satisfaction is fully mediated by employees’ self-efficacy and team efficacy. However, it is possible that the relationship between transformational leadership and job satisfaction and well-being exists simultaneously. Therefore, we also tested two additional hypotheses:

**Hypotheses 2.** The relationship between transformational leadership and job satisfaction is partially mediated by employees’ self-efficacy and team efficacy, i.e. a direct path exists between transformational leadership and job satisfaction.

Or:

**Hypotheses 3.** The relationship between transformational leadership and well-being is partially mediated by employees’ self-efficacy and team efficacy, i.e. a direct path exists between transformational leadership and well-being.

The conceptual/theoretical framework of the mediating relationships between leadership, efficacy and job satisfaction and well-being is summarised in Fig. 1.

3. Method

3.1. Design and procedure

The study used a cross-sectional questionnaire survey design. Participants were asked questions about their self-efficacy, team efficacy, health and well-being and asked to rate their immediate manager (line manager) on a variety of leadership behaviours. Transformational leadership has been shown to operate, and be important, at this managerial level (Bass, 1999). Questionnaire research in Denmark does not require approval by ethic committees and thus approval was not sought. However, the study was approved by the Danish Data Protection Agency and followed the regulations for data storage and protection. Also, before completing the questionnaire, participants received information about the study and it was made clear that participation was voluntary. Also, participants returned their completed questionnaires directly to the research group.

3.2. Participants

The sample consisted of staff working within the elderly care sector for a large Danish local government. In Denmark, the elderly care sector is organized into units where some staff provide care to elderly who are still in their own home and others provide care in elderly care homes. In this sample two units including both types of staff were included. Two independent centers were included in the study with different management and different cultures (One center was larger than the other and 54% of staff came from this center). Staff included cleaning personnel, canteen personnel, healthcare assistants, nurses, physiotherapists, and maintenance staff. Staff were organized in groups, e.g. home care staff covering a geographical area or staff covering a nursing home would constitute a group, each group had a formal
leader with managerial responsibilities; this was the manager they were asked to rate. Teamwork had been implemented across the elderly care 18 months prior to the survey, however, some local managers had already implemented teams 3–5 years ago. Teams were organized such that a group of employees were jointly responsible for a group of patients and would between them decide how to conduct their work. They would hold regular team meetings where they shared experiences with patients, evaluated patient care needs and jointly worked on solving patient issues. The questionnaire was distributed to 521 staff and 274 returned the questionnaire, yielding a response rate of 53%. Surveys were sent to all employees working at the centers. 91% were female, the average age was 45 (SD = 10.93), and they had been working in their current workplace for 7 years on average. The majority of staff (65%) were healthcare assistants (who in addition to primary education have a 1–2 year education at specialised healthcare assistant colleges), 10% were nurses, 19% had other health-related educations and the remaining 6% had no healthcare-related education. In this study we included all types of staff employed at the elderly care centers to ensure that we got a complete picture of the role of transformational leadership style in elderly care settings where also other staff than the healthcare educated (e.g. maintenance staff and canteen personnel) are in close contact with patients.

3.3. Measures

Transformational leadership was measured using the Global Transformational Leadership Scale developed by Carless et al. (2000). It consists of seven items and has been found to have a high degree of convergent validity with more established and lengthier questionnaires such as the MLQ and the LPI (Carless et al., 2000). An example of an item is: “My leader encourages thinking about problems in new ways and questions assumptions”. Response categories were: 1 = To a very large extent, 2 = To a large extent, 3 = Somewhat, 4 = To a small extent, 5 = To a very small extent.

Self-efficacy. A reduced seven-item version of self-efficacy was used (Schwarzer, 1992; Schwarzer and Jerusalem, 1995). An example of an item is “I can always manage to solve difficult problems if I try hard enough”. Responses categories were: 1 = Exactly true, 2 = Moderately true, 3 = Hardly true, 4 = Not at all true. For the analyses the scale was reversed such that a high value represents a high level of self-efficacy.

Team efficacy. A four-item scale from Salanova et al. (2003) was used. An example of an item is: “My group is able to solve difficult tasks if we invest the necessary effort”. Response categories were: 1 = Always, 2 = Often, 3 = Sometimes, 4 = Rarely, 5 = Hardly ever/ever”. For the analyses the scale was reversed such that a high value represents a high level of team efficacy.

The following two scales were both taken from the COPSOQ (Copenhagen Psychosocial Questionnaire, Kristensen et al., 2006).

Well-being (5 items). This scale measured the degree to which employees been in a positive state of mind, e.g. happy and vivacious. An example of an item is: “Have you over the past two weeks felt active and energetic?”. Response categories were: 1 = All the time, 2 = Most of the time, 3 = A bit more than half of the time, 4 = A bit less than half of the time, 5 = Only a little of the time, 6 = Not at all. For the analyses the scale was reversed such that a high value represents a high level of well-being.

Job satisfaction. This was measured using a five-item scale. An example of an item is: “How satisfied are you with your job as a whole, everything taken into consideration?”. The response categories were 1 = Very satisfied, 2 = Satisfied, 3 = Dissatisfied, 4 = Highly dissatisfied.

As all outcomes were measured on different scales, these were transformed to standardized scales so they ranged from 0 to 100 with 100 representing a high score on the construct. For scales with five response categories, responses were transformed such that 1 = 0, 2 = 25, 3 = 50, 4 = 75, 5 = 100. This was done to enhance clarity in the interpretation and meaning of the results.

3.4. Analysis

The mediating effect of team and self-efficacy was tested using structural equation modeling (SEM) with pairwise deletion (LISREL 8.7, Jöreskog and Sörbom, 1999). Scale scores were used as indicators for each construct in the models. We accounted for the effects of measurement error by fixing the value of the unique variance indicator to be one minus the reliability multiplied by the scale variance (Niehoff and Moorman, 1999). A full mediation model (M1) was tested that assumed that the direct relationships previously found in research would not be present because of the mediating effects of followers’ perceptions of their efficacy. To test for partial mediation we first included a direct path between transformational leadership and job satisfaction to test Hypothesis 2. Second, we tested Hypothesis 2 by including an additional path between transformational leadership and well-being. M1 serves as a baseline model against which the other, more complex, models (M2, M3) are examined to see if they offer significant gains in explanatory power. Comparison of M1 to other models will reveal which model accounts best for the data. A model is considered to fit the data better than a rival model if the χ²-value is significantly lower (p < .05) than that of the model to which it was compared. The acceptable levels of fit used to assess the adequacy of each model were according to the recommendations made by Marsh et al. (1988), Browne and Cudek (1993), and Anderson and Gerbing (1988). To test for mediated effects we conducted two analyses: (1) We calculated the mediated effect by multiplying the path from predictor to mediator with the path from the mediator to the outcome variable. (2) We also conducted Sobel’s test (MacKinnon and Dwyer, 1993; MacKinnon et al., 1995) to explore whether the mediator carried the influence of the predictor to the outcome variable. According to Shrout and Bolger (2002), an effect is partially mediated when the indirect effect is smaller and of the same sign as the total effect.
4. Results

4.1. Preliminary analyses

Table 1 displays the scales, means, standard deviations, scale reliabilities, and intercorrelations of all variables in this study. Further, skewness and kurtosis were all below 1.96 indicating normal distribution of the data.

The measures relevant to our mediation models were significantly correlated, i.e. measures of transformational leadership, the hypothesized mediating efficacy variables and employee job satisfaction and well-being. The only relationship which was not significant was between self-efficacy and job satisfaction. Subsequently, the conditions for further analysis of our mediation models were satisfied.

4.2. Testing the hypotheses

First, we tested a full mediation model (Hypothesis 1). In this model we included paths from transformational leadership to team efficacy and self-efficacy and from team efficacy and self-efficacy to job satisfaction and psychological well-being. This model revealed a poor fit to the data: AGFI, CFI, and NNFI were all below the recommended level of .90, but the RMSEA was .18, well above the recommended .08 signifying an acceptable model fit (Table 2). Next, we included a path between transformational leadership and job satisfaction to explore whether partial mediation was at play (Hypothesis 2). This revealed a significantly better model ($\Delta \chi^2 = 25.49$, df = 1, $p < .001$). Both NNFI, CFI and AGFI were above the recommended .90 and RMSEA = .07, below the recommended .08. Finally, we tested a whether a direct effect from transformational leadership to well-being (Hypothesis 3). Although the fits were slightly better, inspection of the parameter estimates revealed that the direct path between transformational leadership and well-being and there was no significant increase in $\chi^2$ ($2.69$, df = 1, $p > .10$) we conclude that model 2 represents the best fit to the data.

In Fig. 2, the direct path model is reported. It provides an overview of the significant paths between transformational leadership, efficacy and job satisfaction and well-being. We also tested the strengths of mediational paths. We calculated the mediated effect by multiplying the path from transformational leadership to self-efficacy (.26), with the path from self-efficacy to well-being (.21). Thus, the mediated effect was .05. Then we calculated the mediated effects for team efficacy: The path from transformational leadership to team efficacy (.39) was multiplied with the path from (a) the path from team efficacy to job satisfaction (.30) indicating a mediated effect of .12 and (b) team efficacy and well-being (.15) indicating a mediated of .06. We subsequently conducted Sobel’s test (MacKinnon and Dwyer, 1993; MacKinnon et al., 1995), which showed a statistically significant mediated effect of self-efficacy on the relationship between transformational leadership and well-being ($z$-value of 2.33, $p < .001$). Next, we tested the mediated effect of team efficacy on the relationship between transformational leadership and well-being. This revealed a significant mediation of $z$-value = 1.35, $p < .10$. Finally, we tested Table 1

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transformational Leadership</td>
<td>61.90</td>
<td>20.31</td>
<td></td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-efficacy</td>
<td>67.16</td>
<td>15.56</td>
<td>.94</td>
<td></td>
<td>.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Team efficacy</td>
<td>79.83</td>
<td>15.60</td>
<td>.37</td>
<td></td>
<td>.16</td>
<td>.90</td>
<td></td>
</tr>
<tr>
<td>4. Job satisfaction</td>
<td>64.91</td>
<td>15.68</td>
<td>.41</td>
<td></td>
<td>.06</td>
<td>.37</td>
<td>.82</td>
</tr>
<tr>
<td>5. Well-being</td>
<td>67.63</td>
<td>15.76</td>
<td>.21</td>
<td></td>
<td>.22</td>
<td>.20</td>
<td>.38</td>
</tr>
</tbody>
</table>

Cronbach’s alpha is listed in the diagonal.

*p < .05.

**p < .01.

Table 2

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>NNFI</th>
<th>CFI</th>
<th>AGFI</th>
<th>RMSEA</th>
</tr>
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<tbody>
<tr>
<td>Measurement model</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Self-efficacy</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>M1: Full mediation model</td>
<td>30.04</td>
<td>3</td>
<td>.57</td>
<td>.87</td>
<td>.80</td>
<td>.18</td>
</tr>
<tr>
<td>M3: Partial mediation model</td>
<td>4.55</td>
<td>2</td>
<td>.94</td>
<td>.99</td>
<td>.95</td>
<td>.07</td>
</tr>
<tr>
<td>M4: Partial mediation model</td>
<td>1.86</td>
<td>1</td>
<td>.96</td>
<td>1.00</td>
<td>.96</td>
<td>.06</td>
</tr>
</tbody>
</table>

Note. NNFI = nonnormed fit index; AGFI = adjusted goodness of fit index; CFI = comparative fit index; RMSEA = root-mean-square error of approximation.
the mediated effect of team efficacy on transformational leadership and job satisfaction. Also this mediation was significant (z-value = 2.63, p < .001). However, also statistically significant was a direct effect between transformational leadership and job satisfaction. The total effect was .37 (not reported in Fig. 2), and the mediated effect .12 was smaller. This confirmed that team efficacy only partially mediated the relationship between transformational leadership and job satisfaction (Shrout and Bolger, 2002). The path from transformational leadership to well-being was not significant. As can be seen rather large proportions of the variance in our measures can be explained. Transformational leadership explains 15% of the variance in team efficacy and 7% of self-efficacy. 30% of the variance in job satisfaction is explained by transformational leadership and team efficacy, while 11% of the variance in well-being is explained by transformational leadership, self-efficacy and team efficacy.

5. Discussion

This study aimed to enhance understanding of the previously established link between transformational leadership and well-being outcomes. The findings both support previous research and extend our understanding about the mechanisms through which transformational leadership affects job satisfaction and well-being. Four key findings are discussed: First, direct associations between team and self-efficacy, and job satisfaction and well-being were found. These findings offer further support to previous research (Jex and Bliese, 1999; Jex and Thomas, 2003) and further, demonstrate the importance of team and self-efficacy in the healthcare setting. Second, the direct relationships between transformational leadership and team and self-efficacy identified in this study support the growing body of research in this area (Chen and Bliese, 2002; Walumbwa et al., 2004), while also demonstrating the importance of transformational leadership in fostering team and self-efficacy within a healthcare environment. Third, the relationship between transformational leadership and job satisfaction was found to be partially mediated by team efficacy. While these findings are consistent with those of Walumbwa et al. (2004), our findings do not support the role of self-efficacy in the transformational leadership and job satisfaction link as proposed by others (Jex and Bliese, 1999; Zellars et al., 2001; Dvir and Shamir, 2003). This finding suggests that when considered simultaneously, team efficacy but not self-efficacy is the mechanism through which transformational leadership exerts its effect on job satisfaction. As such it offers new insights in to how working in teams that are perceived to be competent and capable of handling new challenges. Teams that display higher levels of efficacy may in fact minimize the effects of individuals who are low in self-efficacy. For example, it may protect employees low in self-efficacy, allowing them to experience higher levels of job satisfaction as they are likely to perceive their colleagues to be competent and feel assured by this. The results support the importance of teamwork in elderly care. If employees feel they form part of the strong team where colleagues are competent and capable of solving the challenges faced at work, employees are also more likely to feel satisfied. Finally, team and self-efficacy were found to fully mediate the relationship between transformational leadership and well-being. These findings, together with the larger proportions of variance explained in our study, highlight efficacy at both the individual and team level as key psychological mechanisms in the relationship between transformational leadership and well-being outcomes.

Some limitations should be considered when interpreting our results. First, the study draws from the transformational leadership paradigm. Transformational leadership is a useful, but not exhaustive account of leadership style. Our study used a broad, but reliable and valid measure of transformational leadership to test the validity of mediated relationships. The measure chosen was well-suited to a study population: it was considered that a lengthy questionnaire would adversely influence response rates without leading to substantial gains in reliability and validity. In future research it would be interesting to examine the role of other dimensions of leadership, for example to identify whether transactional styles exhibit direct effects on efficacy and well-being.

Second, the data presented is cross-sectional, and subsequently we are unable to comment on causality. Drawing on longitudinal designs and employee-leader dyads may help to further our understanding of the direction the relationships between leadership and efficacy beliefs and the individual and group levels, and provide further validation of these complex relationships. A third threat to validity of these results is common method variance. To test for common method bias we conducted a Confirmatory Factor Analysis which indicated that the constructs were separate. While these limitations are recognized the present study highlights a number of novel findings: specifically, identifying both team and self-efficacy as a central psychological mechanism through which transformational leadership impacts upon well-being outcomes.

5.1. Implications for practice

Within the pressured and changing environment within which nurses and healthcare professionals work, maintaining and improving levels of job satisfaction and well-being is a key aim for many healthcare employers. In this study, transformational leadership was found to be associated with both job satisfaction and well-being, supporting the proposition that we should be encouraging managers to adopt a transformational style (i.e. work to establish a shared vision through which leaders provide a meaningful and creative basis from where change is brought about in people and contexts (Bass, 1985)). Importantly, previous studies have confirmed that transformational leadership behaviours can be trained (Barling et al., 1996; Parry and Sinha, 2005) and subsequently, moving forward it would be interesting to examine how developments in transformational style impact on efficacy over time. However, the findings of this study highlight the need to be cautious: exerting behaviours associated with transformational leadership (such as stimulating employees to engage in complex decision making and problem solving)
solving, providing a clear vision, coaching and mentoring individuals, etc.) may in the short term lead to increase the well-being of their followers but only if their behaviour alters the way followers perceive themselves.

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Conflict of interest

None declared.

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Ethical approval

Questionnaire research in Denmark does not require approval by ethic committees and thus approval was not sought. However, the study was approved by the Danish Data Protection Agency and followed the regulations for data storage and protection. Also, before completing the questionnaire, participants received information about the study and it was made clear that participation was voluntary. Also, participants returned their completed questionnaires directly to the research group.

Furthermore, the study followed a similar format with regard to employee recruitment, participation and feedback, to other studies conducted by the authors in the UK (Yarker, Munir and Randall, respectively) that have received UK CORE approval.

References


Mental Health 30, 97–108.


Thyer, G., 2003. Dare to be different: transformational leadership may hold the key to reducing nursing shortage. Journal of Nursing Management 11, 73–79.


