

The role of leadership in nurses' wellbeing and performance: A cross-sectional survey using a dual motivational pathway model

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Abstract

Aim: To examine the positive motivational paths from perceived autonomy-supportive leadership, and the negative motivational paths from perceived controlling leadership to satisfaction and frustration of basic psychological needs, work motivation, work performance, work engagement and somatic symptom burden among nurses using Self-Determination Theory.

Design: The study used a cross-sectional design mapping nurses' perceptions of the various study variables through a survey.

Methods: Nurses working in the municipal healthcare in Norway were recruited through an electronic questionnaire sent out via a link to their emails between 29th of August and 29th of September 2020. Of them, 219 nurses completed the questionnaire. Study hypotheses were tested using structural equation modelling.

Results: Higher levels of perceived autonomy-supportive leadership were associated with reduced levels of somatic symptom burden and increased levels of work performance and work engagement through the satisfaction of basic psychological needs and autonomous motivation, specifically identified regulation and intrinsic motivation. Perceptions of controlling leadership were associated with heightened levels of somatic symptom burden through basic psychological need frustration, amotivation and introjected motivation, along with lower levels of work engagement through need frustration and amotivation.

Conclusion: This study underscores the positive motivational paths of perceived autonomy-supportive leadership on nurses' work performance and wellbeing through the facilitation of basic psychological need satisfaction and autonomous motivation. Conversely, the study highlights negative motivational paths of perceived controlling leadership on reduced work engagement and heightened ill-being through the basic psychological need frustration, controlled motivation and amotivation.

Impact: This study provides insights and actionable recommendations for nurses and their leaders, emphasizing the significance of understanding the adverse impact

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associated with perceived controlling leadership. The findings underscore the importance of addressing these issues to mitigate detrimental effects on motivation and overall work functioning.

Patient or Public Contribution: No patient or public contribution.

KEYWORDS

leadership, nurse practitioner, occupational health, quantitative approaches

1 | INTRODUCTION

The nursing profession bears a vital societal responsibility, encompassing the maintenance of health, the recovery from illness, the management of chronic conditions and the assurance of a dignified aging process and end-of-life care for the population. The provision of necessary and accessible high-quality healthcare services hinges on the effective functioning of nurses within their work environment (Day, 2014; Laschinger & Leiter, 2006; Montgomery et al., 2015; Vinje & Mittelmark, 2007). Over time, nurses have grappled with persistent challenges, including time constraints, resource limitations and escalating demands exacerbated by budget cuts and technological advancements (Demerouti et al., 2000; Gelsema et al., 2006). Prolonged exposure to such stressors has been linked to adverse health outcomes (Salleh, 2008) and, consequently, elevated absenteeism rates within this profession. In Norway, while the overall absenteeism rate due to illness stood at 5.8% in the third quarter of 2019 across all occupations, nurses in municipal healthcare reported an absenteeism rate of 11.4%, nearly double that of the broader workforce (Statistisk sentralbyrå, 2020).

Motivation, the driving force behind human behaviour and a pivotal factor in determining individuals' capacity to persevere in the face of challenges and attain their goals (Deci & Ryan, 1985a), plays a substantial role in explaining various work-related outcomes such as work engagement, work performance and absenteeism rates (Deci et al., 2017; Deci & Ryan, 2000; Forest et al., 2023; Olafsen et al., 2017, 2018; Olafsen & Deci, 2020; Slemp et al., 2018; Williams et al., 2014). Drawing upon the Self-Determination Theory (SDT) framework (Deci & Ryan, 1985a, 2000), this study endeavours to delve into the motivational processes of nurses in their work settings. We aim to explore the interplay between nurses' perceptions of leadership, their motivation and the consequent work-related outcomes, both on "the bright side" and "the dark side" of work. SDT, a framework widely employed in previous research to elucidate the links between social contextual factors and work outcomes (Deci et al., 2017; Deci & Ryan, 2000; Forest et al., 2023; Gözükar & Şimşek, 2015; Olafsen et al., 2017, 2018; Olafsen & Deci, 2020; Slemp et al., 2018; Williams et al., 2014), postulates that highly effective organizations can achieve both exceptional performance and employee wellbeing by nurturing high-quality motivation among their workforce (Deci et al., 2017). Given the challenging nature of nursing work (Fernet et al., 2020; Maslach et al., 2001), comprehending the motivational drivers of nurses becomes imperative. SDT

offers a valuable lens through which to examine nurses' motivations and assess the impact of leadership styles on their motivation and wellbeing, exploring "the bright side" and "the dark side" of work. This research not only holds academic significance but also carries practical implications for healthcare institutions seeking to enhance the performance and wellbeing of their nursing staff.

2 | BACKGROUND

Throughout history, a recurrent focus has been placed on evaluating the motivational aspects of individuals when engaging in specific tasks or activities. SDT (Deci & Ryan, 1985a, 2000), represents a significant shift in this perspective, offering a classification of motivational categories based on their inherent qualities. Within the framework of SDT, a pivotal distinction is drawn between autonomous motivation and controlled motivation. *Autonomous motivation* encompasses intrinsic motivation, identified regulation and integrated regulation, all of which are characterized as high-quality and more self-determined forms of motivation, situated on "the bright side" of work. Previous research has consistently demonstrated the favourable outcomes associated with autonomous motivation, typified by a sense of volition and internalization, such as enhanced performance and improved wellbeing (Deci & Ryan, 2000). Examining autonomous motivation in a nursing population is important because it can increase wellbeing and performance and, thus, help promote better healthcare outcomes.

Conversely, *controlled motivation*, situated on "the dark side" of work, encompasses external and introjected regulation, reflecting lower quality motivation driven by external pressures or internal obligations (Deci & Ryan, 2008). The exploration of low-quality motivation and its underlying determinants within the nursing profession assumes paramount importance due to its profound implications. The repercussions extend beyond the wellbeing and performance of nurses, ultimately affecting the quality of patient care, the allocation of healthcare resources and the overall effectiveness of the healthcare system.

Within the overarching categories of autonomous and controlled motivation, various subtypes of motivational regulations have been delineated. SDT introduces a categorization of motivational regulations known as the perceived locus of causality, conceptualized on a continuum (Ryan & Connell, 1989). This continuum begins with *amotivation*, the absence of motivation, where

individuals feel incompetent and act with minimal autonomy and control, akin to the construct of learned helplessness (Abramson et al., 1978; Deci & Ryan, 2014; Ryan & Deci, 2002). One step to the right on the continuum from amotivation lies *external regulation*, the least autonomous form of motivation, characterized by behaviour driven to attain rewards or avoid reprimand from external sources (Ryan & Deci, 2002). Moving along, *introjected regulation* represents a less autonomous form of instrumental behaviour, where motivation stems somewhat from external factors, often entailing control and actions are guided by the desire to evade shame and guilt or to bolster one's ego and sense of self-worth (Ryan & Deci, 2002). *Identified regulation*, situated further along the continuum, embodies a somewhat internal source of motivation where individuals personally identify with an action or its inherent value, fostering a heightened perception of autonomy (Ryan & Deci, 2002). *Integrated regulation* marks a more self-determined form of motivation, with the source of motivation being internal, and individuals acknowledging and embracing the significance of an action, incorporating it into their broader identity. Although resembling intrinsic motivation in several aspects, integrated regulation is categorized as extrinsic because it involves pursuing personal goals instead of deriving inherent pleasure and interest from the activity itself (Ryan & Deci, 2002). *Intrinsic motivation*, at the rightmost end of the continuum, signifies self-motivation, self-determination and behaviour driven by the enjoyment and satisfaction derived from the task or activity itself (Ryan & Deci, 2002).

Recent meta-analytical research has underscored the pivotal role of autonomy-supportive leadership in cultivating autonomous motivation among employees, contributing to “the bright side” of work (Slemp et al., 2018). Such leadership, characterized by the promotion of employee basic psychological needs (the need for autonomy, competence and relatedness), has been linked to enhanced wellbeing and motivation (Oostlander et al., 2014; Slemp et al., 2018). Autonomy-supportive leadership manifests through the creation of an environment where employees can exercise initiative, make choices and feel valued (Deci et al., 2001; Gagné, 2003; Haivas et al., 2012). Simultaneously, investigating the ramifications of controlling leadership behaviours on wellbeing and work-related outcomes assumes critical importance, representing “the dark side” of leadership (Moreau & Mageau, 2012). Controlling leadership is characterized as a leadership approach wherein leaders actively cultivate controlled work motivation among their employees. This approach typically involves the use of directive tactics and the application of pressure to enforce specific standards or expectations, often affording employees limited autonomy and decision-making authority (Deci & Ryan, 1985b, 2000). While research on controlling leadership within nursing contexts remains somewhat limited, existing studies offer valuable insights, underscoring its potential adverse impact on nurses' psychological needs, work engagement and overall job satisfaction (Huyghebaert-Zouaghi et al., 2022; Sarmah et al., 2022; Trépanier et al., 2019).

Moreover, specific work-related outcomes in the nursing profession deserve attention. Somatic symptom burden, defined as the

experience of physical illness without a medical explanation (e.g. chest pain, headache, abdominal pain), has become increasingly prevalent among nurses during the pandemic (Muller et al., 2020; Pappa et al., 2020). It is associated with higher levels of emotional exhaustion, turnover intention and absenteeism (Williams et al., 2014). Work engagement and work performance are crucial outcomes related to employees' wellbeing and functioning at work (Day, 2014; Laschinger & Leiter, 2006; Montgomery et al., 2015). Engaged employees not only positively impact their organization's finances but also contribute to critical patient safety and quality in patient care and experience (Day, 2014; Laschinger & Leiter, 2006; Montgomery et al., 2015; Vinje & Mittelmark, 2007).

In summary, autonomy-supportive leadership has demonstrated its ability to yield positive work outcomes by promoting need satisfaction and autonomous motivation, illuminating “the bright side” of work (Ryan & Deci, 2000). Conversely, controlling leadership has been associated with the frustration of basic psychological needs, resulting in controlled motivation and unfavourable work outcomes, representing “the dark side” of work (Sarmah et al., 2022). This study seeks to explore the impact of these contrasting leadership styles on work performance, work engagement and somatic symptom burden within the nursing profession.

3 | THE STUDY

3.1 | Aims

In this study we aim to provide valuable insights into the implications of two distinct leadership styles (i.e. perceived autonomy-supportive and perceived controlling) and how it relates to nurse's wellbeing and work outcomes through a full dualistic motivational model where nurses' experiences of fulfilment (or not) of their basic psychological needs and quality of motivation (i.e. amotivation, external regulation, introjected regulation, identified regulation and intrinsic motivation). Autonomy-supportive leadership have been studied extensively (Slemp et al., 2018), but the opposite, controlling leadership, is mostly studied in parenting, educational and health domains (Aelterman et al., 2019; Halvari et al., 2017, 2019; Mageau et al., 2015). It is especially important to fill the gap in existing research on work motivation processes by expanding the knowledge of “the dark side of work” and its negative consequences for nurses as this have received scarce attention (Sarmah et al., 2022). By understanding the negative consequences of work for nurses, we can develop strategies and interventions to train leaders, mitigate negative effects, and promote the wellbeing and health of nurses. This can help to ensure nurses ability to provide high-quality care to patients and to sustain their careers over the long term, to create a fairer and just work environment and contribute to the broader field of nursing and help inform future research and practice.

The hypothesized model illustrating our assumptions (see Figure 1) are deduced from SDT proposing a full dualistic

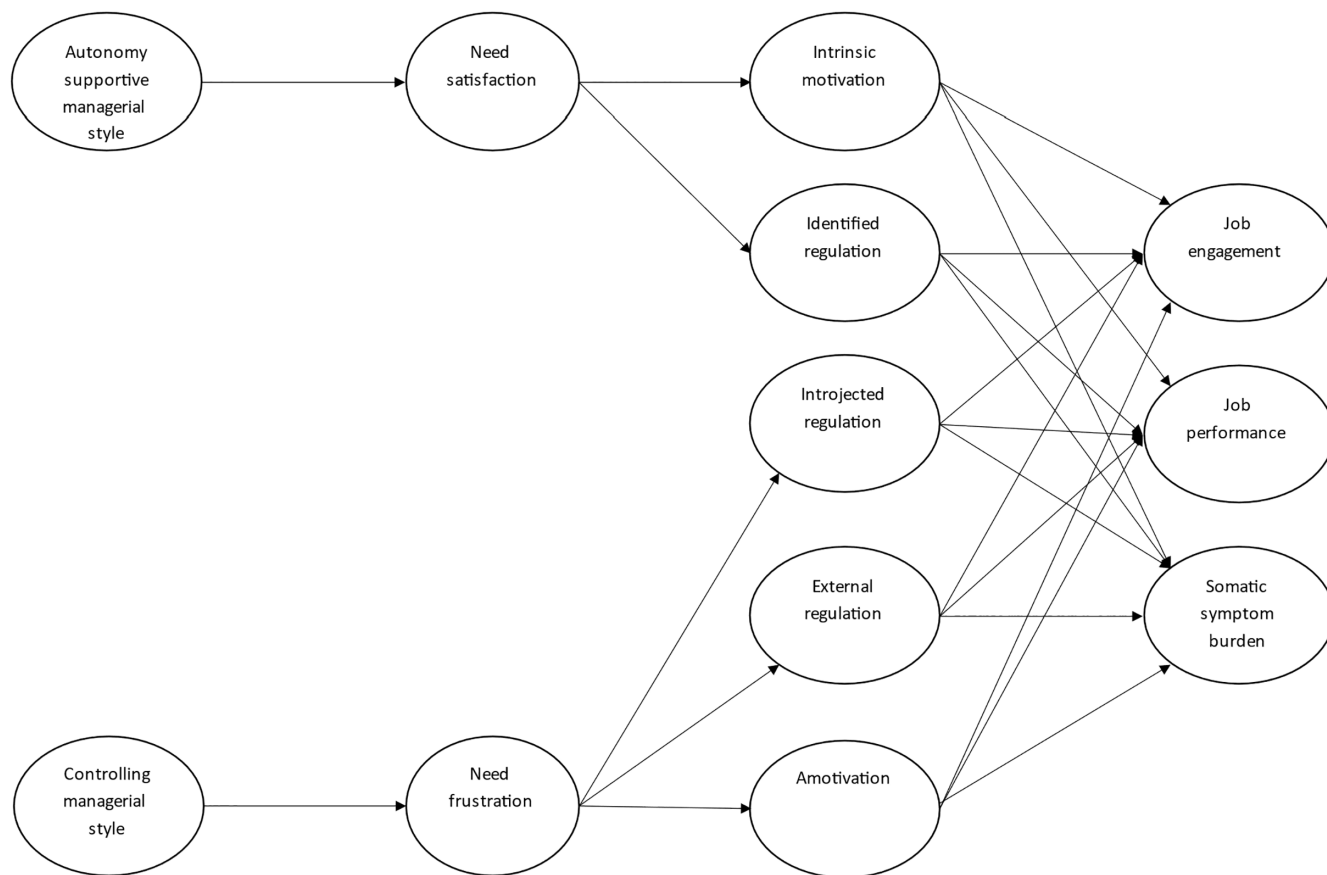


FIGURE 1 The hypothesized SDT structural model of job engagement, job performance and somatic symptom burden.

motivational model providing insights into both the “bright and the dark side of work” for nurses by examining the different relationships between perceived leadership (i.e. perceived autonomy-supportive and perceived controlling) and employee functioning and health (work engagement, work performance and somatic symptom burden) through investigating the role of the basic psychological needs for autonomy, competence and relatedness (i.e. satisfaction and frustration) and work motivation (i.e. intrinsic motivation, identified regulation, introject regulation, external regulation and amotivation) in these relations. In our model we expected that nurses' perception of the level of autonomy-support from their supervisor is positively associated with their need satisfaction. In parallel, we expected that the extent to which the nurses perceived their supervisors as controlling would positively relate to need frustration. Need satisfaction was expected to be positively associated with the autonomous types of work motivation (i.e. intrinsic motivation and identified regulation), which in turn was expected to be positively related to work engagement and work performance, and negatively related to somatic symptom burden. Need frustration was expected to be positively associated with the controlled types of work motivation (i.e. external regulation and introjected regulation) as well as amotivation, which in turn was expected to be negatively associated with work engagement and work performance and positively associated with somatic symptom burden.

4 | METHODS

4.1 | Study design

The presented research employed a cross-sectional study design to investigate the relationships between perceived leadership styles, motivational orientations and work-related outcomes.

4.2 | Study setting and sampling

The study performed a convenience sampling. Nurses in the public sector from different municipalities in Norway were invited to partake in a self-conducted questionnaire survey. As described further down, we used the Norwegian Nursing Association (NSF) to forward the survey to safeguard privacy and anonymity. NSF is the largest union for nurses in Norway, representing over 70% of all nurses in the country. Of these members, 39% are employed in municipality health care (Norsk sykepleierforbund, 2020). The Norwegian Nurses' Association organizes a diverse group of nurses, including nursing students and retirees. In many cases, they also organize nurses who have transitioned to other occupations, or who for other reasons no longer work as nurses (Norsk sykepleierforbund, 2020). These nurses will naturally not have received information about the study and fall outside the selection criteria.

4.3 | Variables and measurement

Perceived autonomy-supportive leadership was measured with the six-item short version of the Work Climate Questionnaire (WCQ) (Baard et al., 2004) adopted to Norwegian language (Olafsen et al., 2018; Williams et al., 2014). The items (e.g. "I feel that my manager has provided me choices and options", $\alpha = .94$) was assessed on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). *Perceived controlling leadership* was measured with the first three items from the Psychologically Controlling Teaching Scale (Soenens et al., 2012), modified to reflect the work context and the Norwegian language (Halvari et al., 2021). The items (e.g. "My manager is less kind to me if I do not see things the way he/she does", $\alpha = .92$) was assessed on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). *Satisfaction and frustration of the basic psychological needs* were measured with the Basic Psychological Need Satisfaction and Frustration at Work Scale validated in Norwegian (Olafsen et al., 2021). The needs for competence, autonomy and relatedness were measured in relation to both satisfaction and frustration with 4 items each, totally 24 items. The items regarding autonomy need satisfaction (e.g. "At work, I feel that the choices I make express who I really am", $\alpha = .83$), competence need satisfaction (e.g. "I feel competent in reaching my goals at work", $\alpha = .87$) and relatedness need satisfaction (e.g. "I feel closely connected to other people who are important to me at work", $\alpha = .86$) was assessed on a scale ranging from 1 (*not at all true*) to 7 (*very true*). The same scale was used regarding the items related to autonomy need frustration (e.g. "I feel pressured to do many of the things I do at work", $\alpha = .89$), competence need frustration (e.g. "I feel insecure about my abilities at work", $\alpha = .85$) and relatedness need frustration (e.g. "I have the impression that people that I spend time with at work dislike me", $\alpha = .86$). *Work motivation* was assessed using the Multidimensional Work Motivation Scale (MWMS) by Gagné et al. (2015) measuring five distinct motivational regulations. The MWMS has been validated in seven languages including Norwegian (Gagné et al., 2015). The items regarding amotivation (e.g. "I don't know why I'm doing this job, it's pointless work", $\alpha = .65$), external regulations (e.g. "Because others will reward me financially only if I put enough effort in my job", $\alpha = .79$), introjected regulation (e.g. "Because otherwise I will feel ashamed of myself", $\alpha = .73$), identified regulation (e.g. "Because putting efforts in this job aligns with my personal values", $\alpha = .87$) and intrinsic motivation (e.g. "Because the work I do is interesting", $\alpha = .91$) was assessed on a scale ranging from 1 (*not at all*) to 7 (*completely*). *Work engagement* was assessed with the short version of the Utrecht Work Engagement Scale (UWES-9) by Schaufeli et al. (2002), previously validated in Norwegian (Nerstad et al., 2009). The scale consists of the sub-dimension's vigour (e.g. "I am full of energy in my work"), dedication (e.g. "I am proud of the work I do"), and absorption (e.g. "I feel happy when I am immersed in my work") and were assessed on a scale ranging from 1 (*never*) to 7 (*daily*). Reliability for nine items: $\alpha = .94$. *Work performance* was assessed with five items that are intended to capture how much effort employees put in their works as well as five items to capture the quality of the input. This scale has been validated in Norway by

Kuvaas and Dysvik (2009). The items (e.g. "I deliver higher quality than what can be expected from someone with the type of job I have", $\alpha = .87$) were assessed on a scale ranging from 1 (*never*) to 7 (*always*). *Somatic Symptom Burden* was measured with Somatic symptom scale 8 (SSS-8) validated by Gierk et al. (2014). SSS-8 contains of a list describing eight health symptoms. This scale was translated to Norwegian and has been used in Norway (Williams et al., 2014). Responses indicated how bothered the respondent have been by these health problems in the past 30 days (e.g. "stomach and bowel problems") assessed on a scale ranging from 1 (*not bothered at all*) to 5 (*very much*).

4.4 | Data collection

Data collection took place between 29th of August to 29th of September 2020. Data were collected via questionnaire surveys in Norwegian. The questionnaire was created in a web form from the University of Oslo (UiO web form) and the link to the survey pointed to that platform. An invitation to the electronic survey was distributed to local leaders in NSF in a random sample of municipalities of varying sizes in Norway with a request to forward the invitation to all nurses in the municipality. The study packet contained an informational text including a description of the study's purpose, and information about optional participation and anonymity. Returning the voluntary questionnaire was considered as informed consent. By doing so the authors did not gather private information and contact details from the respondent, it was completely anonymous. The extent of information dissemination to the nurses and the potential number of participants remains unclear due to the study's optional and anonymous nature. Nonetheless, we received responses from 219 nurses.

4.5 | Ethical considerations

All data were treated confidentially and anonymized, and we did not collect any data that could identify the participants. The questionnaire was distributed via a link forwarded by a third party and the researchers do not have access to email addresses, IP addresses or other identifiable information related to the participants' answers. The Norwegian Agency for Shared Services in Education and Research (previously Norwegian Centre for Research Data) (NSD) confirmed that the study was not subject to notification as it did not collect personal data. All information has been processed confidentially.

4.6 | Data analytic strategy

Pearson correlations were applied, except for correlations involving dichotomous variables where Spearman's point bi-serial correlations were used. The conceptual model, including the tests of indirect links

among the study variables, was evaluated using Structural Equation Model (SEM) using LISREL version 11.0. Six variables were parcelled due to a high number of variables and indicators (i.e. scale items) relative to the sample size. That is, we randomly assigned items for perceived autonomy-supportive leadership, work engagement, work performance and somatic symptom burden into three parcels, each with two to three items as recommended by Little et al. (2002). In addition, the three needs were parcelled for satisfaction and frustration, respectively, as previously done in SDT research (Halvari et al., 2017; Niemiec et al., 2022). For the variables perceived controlling leadership and motivational regulations items were used non-parcelled.

To evaluate the fit of the model tested, we used the chi-square likelihood ratio (X^2), the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI) and the Incremental Fit Index (IFI) as recommended by Bollen (1989) and Hu and Bentler (1999). A good model fit is described by the following fit indices: RMSEA \leq .06, SRMR \leq .08, CFI and IFI \geq .95. Values below .95 but above .90 have also been considered as acceptable. According to the two-stage procedure proposed by Anderson and Gerbing (1988) the measurement model should have an acceptable fit before it is included in the test of the structural model. Regarding the indirect relations, an indirect link is significantly supported if the bias-corrected 95% confidence intervals (for the bands of products of coefficients after 5000 resampling's) do not include zero or oppositely valued coefficients (Preacher & Hayes, 2008).

5 | RESULTS

5.1 | Characteristics of the sample

Most of the nurses employed in the municipal healthcare were in the age group 45–54 years (18,000) and the fewest in the age group under 25 years (1000). 21% were 55 years old or more (Statistisk sentralbyrå, 2020). This is consistent with the nursing population in this study, described by 42.09 ($SD = 11.14$) as average age of the participants. In this study, 26.5% of the participants are 50 years or older, and 16.4% under the age of 30. In 2020, 9% of the members in Norsk sykepleierforbund were men, 91% women. This study's population represents a slight discrepancy in this area, as it is represented by 96.8% women and 3.2% men. The total study sample is represented by nurses working in institutions ($n=100$), home nursing ($n=70$), home nursing and institutions ($n=15$) and other services ($n=34$). According to Statistisk sentralbyrå (2020), 76% of nurses working in the municipal healthcare were employed in municipal care services (e.g. nursing homes and home care) and 23% were employed in municipal healthcare services (e.g. general practitioners office, health clinic and school health services). In our sample it is a small discrepancy represented with 84.5% working in municipal care services and 15.5% working in municipal healthcare services. Service seniority was measured in time spans with the following results: 0–9 years ($n=137$), 10–19 years ($n=50$), 20–29 years ($n=25$), 30–39 years ($n=4$) and 40–49 years ($n=1$). Participants' work experience was

measured in time spans with the following results: 0–9 years ($n=71$), 10–19 years ($n=79$), 20–29 years ($n=44$), 30–39 years ($n=22$) and 40–49 years ($n=2$). Most of the respondents worked in a large municipality with more than 20,000 inhabitants ($n=110$), the rest worked in middle sized municipalities consisting of between 5,000 and 19,999 inhabitants, ($n=71$), and some in small sized municipality containing between 0 and 4,999 inhabitants ($n=38$).

5.2 | Descriptive statistics, reliability and correlations among variables

Descriptive statistics and correlations are presented in Table 1. Distribution of scores is relatively normal according to skewness values, and reliability of measures are acceptable. Pearson correlations support the expected associations. In testing the model in Figure 1, significant factor loadings for items / parcels for each variable were (loadings in parentheses) for perceived autonomy-support (.92, .91, .94), for perceived controlling leadership (.85, .93, .90), for need satisfaction (.77, .66, .62), for need frustration (.79, .69, .69), for intrinsic motivation (.82, .91, .89), for identified regulation (.82, .88, .79), for introjected regulation (.70, .65), for external regulation (.78, .84, .67), for amotivation (.41, .65, .74), for work engagement (.92, .98, .91), for work performance (.82, .85, .86) and for somatic symptom burden (.87, .76, .66).

5.3 | Test of hypothesized model

5.3.1 | Measurement model

The a priori measurement model was evaluated with all variables and indicators described and was found to fit the data well [X^2 ($df=494$, $N=219$)=864.12, $p < .001$; $X^2/df=1.75$; RMSEA (95% CI)=.059 (.052, .065); CFI=.93; IFI=.93; SRMR=.062]. Modification indices suggested to improve the model by adding a negative error covariance between the need satisfaction and frustration, which was evaluated as theoretical meaningful (Deci & Ryan, 2000). Adding this in the final measurement model yielded good fit indices: [X^2 ($df=494$, $N=219$)=828.14, $p < .001$; $X^2/df=1.68$; RMSEA (95% CI)=.056 (.049, .062); CFI=.94; IFI=.94; SRMR=.062].

5.3.2 | Structural model

The a priori structural model was assessed with the above-described measurement model as well as the structural paths displayed in Figure 1. The results showed an acceptable fit: [X^2 ($df=536$, $N=219$)=1087.79, $p < .001$; $X^2/df=2.03$; RMSEA (90% CI)=.069 (.063, .075); CFI=.90; IFI=.90; SRMR=.113]. Modification indices suggested to improve the model by adding positive error covariances between introjected regulation and external regulations, and between work engagement and work performance, as well as a path from perceived

TABLE 1 Means, SD's, skewness and Pearson correlations among variables (N=219). Cronbach α -coefficients in the Diagonal.

	M	SD	Skew	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	
1. Autonomy-support	4.7	1.5	-0.6	.94																		
2. Controllingness	3.1	1.8	0.6	-0.68	.92																	
3. Need satisfaction, Total	5.5	0.9	-1.1	.46	-.35	.90																
4. Autonomy satisfaction	4.9	1.2	-0.7	.43	-.36	.84	.83															
5. Competence satisfaction	5.9	0.9	-1.5	.35	-.18	.78	.50	.87														
6. Relatedness satisfaction	5.6	1.1	-1.1	.32	-.29	.81	.49	.47	.91													
7. Need frustration, Total	2.6	1.1	0.6	-.49	.46	-.67	-.54	-.59	-.51	.91												
8. Autonomy frustration	3.6	1.6	0.2	-.46	.46	-.58	-.54	-.46	-.41	.88	.89											
9. Competence frustration	2.3	1.2	1.0	-.34	.26	-.56	-.39	-.61	-.40	.82	.58	.85										
10. Relatedness frustration	1.9	1.1	1.5	-.42	.43	-.53	-.40	-.43	-.47	.79	.55	.50	.86									
11. Intrinsic motivation	4.9	1.3	-0.5	.32	-.28	.62	.62	.47	.41	-.52	-.49	-.41	-.38	.91								
12. Identified regulation	5.7	0.9	-0.8	.07	-.04	.32	.29	.23	.24	-.21	-.17	-.21	-.15	.47	.87							
13. Introjected regulation	4.5	1.2	-0.1	-.15	.18	-.04	.03	-.15	-.02	.22	.18	.22	.13	.06	.32	.73						
14. External regulation	3.4	1.1	0.0	-.05	.08	-.08	-.02	-.10	-.08	.20	.16	.24	.09	-.07	.01	.34	.79					
15. Amotivation	1.5	0.7	1.9	-.31	.23	-.48	-.41	-.35	-.40	.53	.47	.43	.41	-.40	-.28	.08	.13	.65				
16. Job engagement	4.9	1.4	-0.6	.42	-.36	.61	.60	.45	.41	-.59	-.58	-.45	-.43	.64	.25	-.08	-.03	-.48	.94			
17. Job performance	5.1	0.9	-0.2	.11	-.08	.23	.24	.22	.10	-.09	-.07	-.10	-.07	.28	.33	.21	.09	-.08	.33	.87		
18. Somatic symptom burden	2.4	0.8	0.5	-.29	.31	-.43	-.43	-.30	-.30	.58	.52	.48	.43	-.39	-.10	.19	.11	.37	-.53	.06	.80	
19. Age	42.1	11	0.1	.13	-.12	.09	.04	.05	.12	-.14	-.13	-.13	-.08	.05	.03	-.11	-.01	-.08	.10	-.02	-.07	-.07

Note: $r > .14$, $p < .05$; $r > .17$, $p < .01$; $r > .20$, $p < .001$; two-tailed tests.

autonomy-supportive leadership to need frustration. These suggestions were evaluated based on theory and previous research (Deci & Ryan, 2000; Halvari et al., 2017; Ryan & Deci, 2017), found meaningful and included, which yielded good fit indices for the final structural model: [χ^2 ($df=536$, $N=219$)=961.41, $p<.001$; $\chi^2/df=1.79$; RMSEA (90% CI)=.060 (.054, .066); CFI=.92; IFI=.92; SRMR=.086]. The standardized parameter estimates are shown in Figure 2.

5.3.3 | Tests of indirect links

We evaluated the indirect links in Figure 2 when simultaneously assessing the structural model in LISREL. The analysis indicated that all the indirect associations from perceived autonomy-supportive leadership to the three outcome variables (viz., work engagement, work performance and somatic symptom burden), through psychological

need satisfaction and frustration and, in turn, motivational regulations (i.e. amotivation, external regulation, introjected regulation, identified regulation and intrinsic motivation), were significantly supported (see Table 2, indirect links number 14–16). In addition, perceived controlling leadership was indirectly negatively associated with work engagement through need frustration and amotivation, and positively associated with somatic symptom burden through need frustration, introjected regulation and amotivation (see Table 2, indirect links number 17–18).

6 | DISCUSSION

This study delves into the perceptions of two contrasting leadership styles, namely autonomy-supportive and controlling, within the nursing profession. Our research builds upon the extensive body of

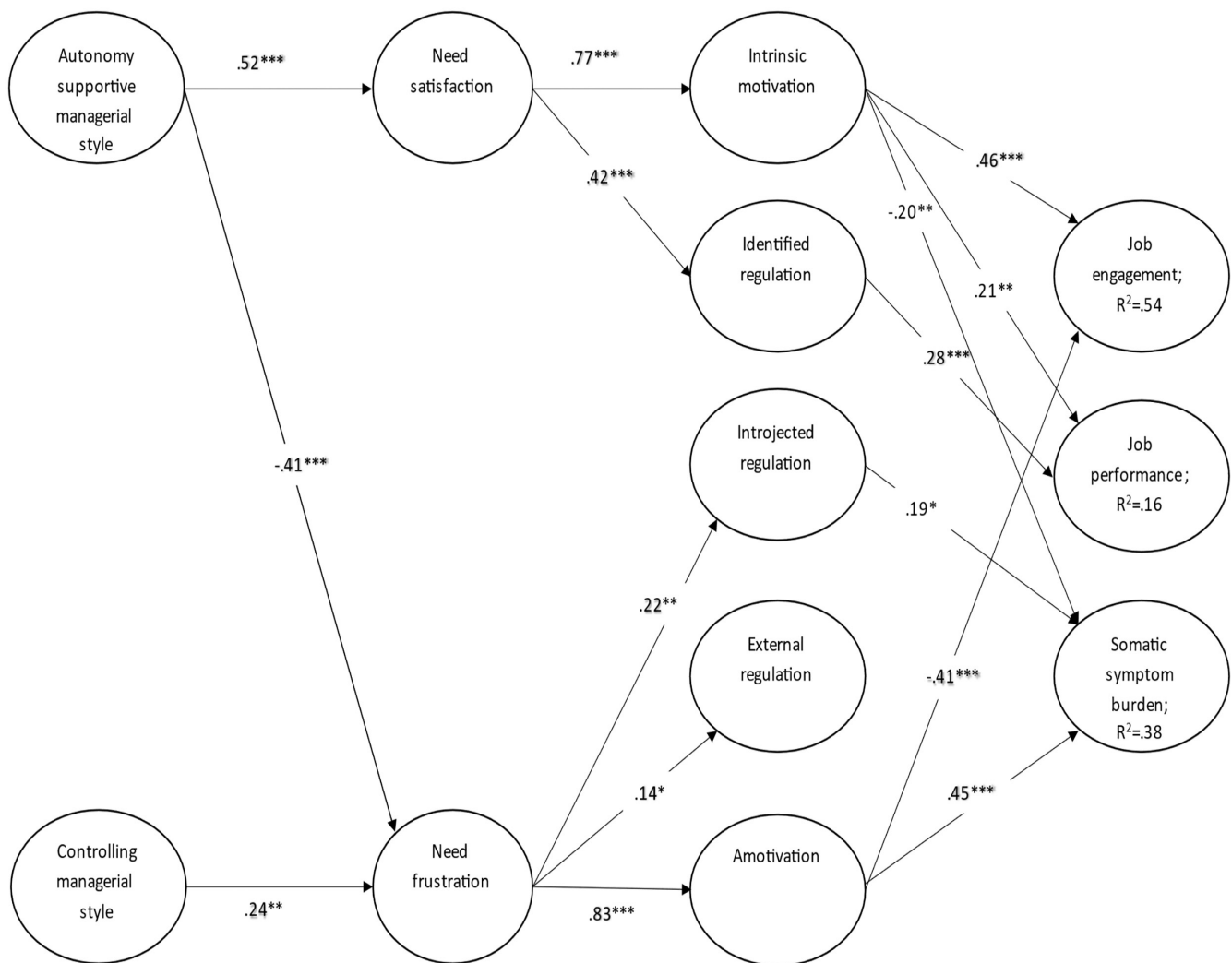


FIGURE 2 Standardized parameter (regression) estimates depicting the relations in the SDT structural model of job engagement, job performance and somatic symptom burden [χ^2 ($df=536$, $N=219$)=961.41, $p<.001$; $\chi^2/df=1.79$; RMSEA (90% CI) = .060 (.054, .066); CFI = .92; IFI = .92; SRMR = .086]. * $p < .05$; ** $p < .01$; *** $p < .001$; NS=Not Significant. Due to presentation clarity, nonsignificant paths from motivational regulations to outcomes, and error terms and factor loadings are omitted. Factor loadings are presented in the data analysis section. All variables are latent.

TABLE 2 LISREL tests of indirect links emerging in Figure 1.

Independent variable (IV)	Mediators (M)	Dependent variable (DV)	Point		a*b-path Z	Bootstrapping BC 95% CI	
			estim.	SE		Lower	Upper
1. Autonomy support →	Need satisfaction (NS) →	Intrinsic motivation (IN)	0.41	0.06	6.44***	0.29	0.53
2. Autonomy support →	Need satisfaction →	Identified regulation (ID)	0.23	0.05	4.52***	0.13	0.23
3. Autonomy support →	Need frustration (NF) →	Introjected regulation (IJ)	-0.09	0.04	-2.03*	0.01	0.17
4. Autonomy support →	Need frustration →	External regulation	-0.06	0.04	-1.65	-0.02	0.14
5. Autonomy support →	Need frustration →	Amotivation (Amot)	-0.34	0.10	-3.49**	-0.14	-0.54
6. Controllingness →	Need frustration →	Introjected regulation	0.05	0.03	1.77	-0.01	0.11
7. Controllingness →	Need frustration →	External regulation	0.03	0.02	1.50	-0.01	0.07
8. Controllingness →	Need frustration →	Amotivation	0.20	0.08	2.51*	0.04	0.36
9. Need satisfaction →	Intrinsic motivation →	Job engagement	0.32	0.06	5.30***	0.20	0.44
10. Need satisfaction →	Intrinsic motivation & identified regulation →	Job performance	0.28	0.08	3.67***	0.12	0.44
11. Need satisfaction →	Intrinsic motivation →	Somatic symptom burden	-0.12	0.06	-1.86	0.00	0.24
12. Need frustration →	Amotivation →	Job engagement	-0.34	0.07	-5.02***	-0.20	-0.48
13. Need frustration →	Introjected regulation & Amotivation →	Somatic symptom burden	0.41	0.08	4.87***	0.23	0.59
14. Autonomy support →	NS, NF, IN & Amotivation →	Job engagement	0.31	0.05	5.85***	0.21	0.41
15. Autonomy support →	NS, IN & ID →	Job performance	0.11	0.04	2.91**	0.03	0.19
16. Autonomy support →	NS, IN, NF, IJ & Amotivation →	Somatic symptom burden	-0.23	0.05	-4.48***	0.13	0.33
17. Controllingness →	NF & Amotivation →	Job engagement	-0.08	0.03	-2.49*	-0.02	-0.14
18. Controllingness →	NF, Introjected regulation & Amotivation →	Somatic symptom burden	0.10	0.04	2.47*	0.02	0.18

* $p < .05$. ** $p < .01$. *** $p < .001$.

literature rooted in SDT applied to the broader work context (Forest et al., 2023; Olafsen & Deci, 2020; Ryan & Deci, 2017), particularly within the nursing profession in municipal healthcare. We explore these contrasting leadership styles within a comprehensive motivational framework, illuminating both the “bright and dark pathways” and their associated work outcomes. In particular, the model examines the impact of perceived leadership style (autonomy-supportive vs. controlling) on nurses' wellbeing and performance, mediated by satisfaction and frustration of basic psychological needs and distinct forms of work motivation (i.e. amotivation, external regulation, introjected regulation, identified regulation and intrinsic motivation).

The SEM analysis largely supported the hypothesized model positing that nurses perceiving autonomy-supportive leadership would experience greater basic psychological need satisfaction, leading to autonomous work motivation (identified regulation and intrinsic motivation). This, in turn, would foster heightened work engagement, work performance and reduced somatic symptom burden. Additionally, the SEM analysis also supported the hypothesized model related to perceived controlling leadership, suggesting that nurses perceiving controlling leadership would experience lower basic psychological need satisfaction, resulting in controlled work motivation (external regulation and introjected regulation) as well as amotivation. Controlled work motivation, in this context, was associated with reduced work engagement and increased somatic

symptom burden, aligning with “the darker side of work” outcomes. These findings provide a comprehensive view of the contrasting impacts of leadership styles within the nursing profession, shedding light on the complex interplay between leadership, motivation and various work-related outcomes.

6.1 | Theoretical discussion and implications

Our findings revealed a modest negative correlation between perceived autonomy-supportive leadership and perceived controlling leadership, affirming that these are distinct constructs, consistent with prior research (Huyghebaert-Zouaghi et al., 2022; Sarmah et al., 2022; Tuin et al., 2020). By integrating these leadership styles within a single model, we underscore the sharp contrast between them as distinct precursors to either the satisfaction or frustration of basic psychological needs, motivational regulations and work outcomes. In line with Tuin et al. (2020), we recognize the significance of need satisfaction and need frustration as psychological mechanisms. While these constructs are often regarded as a unifying principle in some studies (Meyer & Gagnè, 2008), they are also recognized as separate dimensions, each with unique predictive validity concerning various outcomes. Although the interplay between need satisfaction and need frustration in a single

structural model is not extensively studied, it offers crucial insights into leadership orientation and its consequences. Our approach to assessing basic psychological needs involved an aggregate measurement strategy, consolidating them into composite forms rather than isolating individual needs. This decision aligns with the work of Vansteenkiste and Ryan (2013), who advocate for focusing on the interplay between basic psychological need satisfaction and frustration, rather than dissecting individual needs in isolation, to gain a more comprehensive understanding of motivational dynamics.

Furthermore, our research supports the premise of SDT (Deci & Ryan, 2000; Gagné & Deci, 2005) and expands upon existing literature (Slemp et al., 2018). We show that when leaders are perceived as autonomy-supportive (i.e. showing genuine interest in employees' viewpoints, providing choices and explaining reasons when choices are limited), employees tend to be better off. This satisfaction of their basic psychological needs promotes autonomous forms of motivation, such as identified regulation and intrinsic motivation, resulting in increased wellbeing and performance among nurses.

Our findings also reveal that perceived leader autonomy-support not only fosters satisfaction of nurses' basic psychological needs for autonomy, competence and relatedness but also reduces need frustration in these areas. For instance, when leaders actively listen to and validate their employees' perspectives, encourage independent choices and initiatives, and provide clear reasoning for their decisions, nurses experience less frustration in their inherent needs, resulting in a more motivated and engaged workforce. The observed partial mediation effects align with previous research, demonstrating that need satisfaction serves as a crucial bridge between perceived leadership and autonomous work motivation (Forest et al., 2023; Ryan & Deci, 2017).

It is noteworthy that our study contributes to the existing discourse by revealing the dual role of perceived autonomy-supportive leadership in simultaneously elevating autonomous motivation while reducing the prevalence of controlled forms of motivation. In addition to supporting the principles of SDT, our findings also add to previous literature (Williams et al., 2014) by highlighting a significant association between nurses' perceptions of autonomy-supportive leadership and their wellbeing, resulting in a reduced somatic symptom burden. Further analysis reveals that this relationship is mediated by need satisfaction and intrinsic motivation. These findings underscore the importance of fostering autonomy-supportive leadership in healthcare settings to positively impact nurses' wellbeing and mitigate somatic symptom burden. Because the consequences of somatic symptom burden are related to functional disability and poor quality of life (Löwe et al., 2008), as well as being associated with higher levels of medical utilization and lower levels of work productivity (Barsky et al., 2005), this finding highlights the potential for autonomy-supporting leadership to yield benefits not only for individual employees but also for the organization and broader society.

This study delves into the less explored facets of motivational processes at work, often referred to as the "dark side of work", and

their implications in healthcare settings. While previous research, with some exceptions (Niemiec et al., 2022; Olafsen et al., 2017; Sarmah et al., 2022), has primarily focused on the positive aspects of motivation at work, this study aims to shed light on the potential detrimental consequences of certain negative aspects, particularly within the healthcare sector. Recognizing the importance of addressing these negative aspects is paramount, as they can significantly impact the quality of healthcare services and the wellbeing of healthcare workers. This emphasis on exploring "the dark side" of motivational processes aligns with critical research priorities outlined by Deci et al. (2017) and extends the existing literature within the context of healthcare. In the following discussion, we will further delve into these issues, examining the relationships between perceived controlling leadership and key psychological factors, including basic psychological needs, motivational regulations and work outcomes, within a nursing population.

Our findings resonate and expand upon the work of Sarmah et al. (2022), which underscores the detrimental effects of controlling leadership resulting in exhaustion and identifies controlling leadership as a catalyst for nurses' need frustration, ultimately leading to controlled motivation and subsequent unfavourable work outcomes such as increased somatic symptoms and reduced work engagement. Additionally, our results contribute and extend prior research (Olafsen et al., 2017; Sarmah et al., 2022) by illustrating the detrimental impact of controlling leadership on motivational processes. Our findings highlight the mediation role of need frustration and controlled types of work motivation, illustrating how nurses are susceptible to reduced work engagement and increased somatic symptom burden due to amotivation and introjected regulation, which stem from frustrated basic psychological needs brought about by perceived controlling leadership.

The significance of this study is underscored by the increasing prevalence of somatic symptom burden among nurses during the pandemic, as substantiated by the research of Muller et al. (2020) and Pappa et al. (2020). Individuals who grapple with somatic symptom burden have been found to exhibit heightened levels of emotional exhaustion, an increased likelihood of considering turnover and a greater tendency to be absent from work (Williams et al., 2014). This aligns with previous findings from Olafsen et al. (2017), which indicate that frustration of basic psychological needs for autonomy, competence and relatedness is closely associated with heightened work-related stress and somatic symptom burden. Our research extends this existing knowledge by incorporating an examination of perceived leadership behaviours and their relationships with fundamental psychological needs, motivational regulations, somatic symptom burden, work engagement and work performance among nurses. In essence, our study delves deeper into the complex interplay of these factors, enhancing our understanding of their collective impact on nurses' wellbeing and productivity. It is worth noting that we did not find significant relationships between external regulation and the work outcomes examined in this study. While the reasons for this lack of significance warrant further exploration, it could be influenced by the unique nature of the nursing

profession itself, potentially obscuring any potential relationship or it may suggest that other motivational regulations play more influential roles in predicting work outcomes (see, for instance, Van den Broeck et al., 2021). Additionally, we did not observe a significant relationship between the two types of controlled motivation and work performance, which might be attributed to measurement imprecision. The utilization of objective performance measurements or the influence of context-specific factors could potentially yield different results; however, recent meta-analytic findings suggest that identified motivation followed by intrinsic motivation are indeed the most important types of motivation for performance in the workplace (Van den Broeck et al., 2021).

6.2 | Practical implications

Based on the findings of this study, occurrence of somatic symptom burden, along with low scores in work performance and work engagement, can be linked to a maladaptive motivational process influenced by perceptions of controlling leadership. This could leave municipal healthcare with a heavy cost due to ill-health and potential absence among nurses. We know that poor health and ill-being are associated with less productivity, decreased quality in decision-making and more absenteeism among employees (Boyd, 1997; Williams et al., 2014). Moreover, the financial cost is astonishing for the society; total sick leave in all sectors costs the Norwegian society a total of 8,2 billion dollars per year (Hammernes, 2021).

Offering training to nurse leaders that focuses on improving their autonomy-supportive behaviours while reducing their controlling tendencies towards employees can greatly benefit by promoting employee need satisfaction, minimizing need frustration and ultimately enhancing both work performance and staff wellbeing. Support for autonomy is even demanded by the Norwegian Working Environment Act § 4-2 which specifies that employees should have the right to experience self-determination, influence and co-determination (Arbeids- og inkluderingsdepartementet, 2006).

To foster an autonomy-supportive environment for nurses, leaders can take a variety of steps. Firstly, they should encourage active listening to and validation of the perspectives and emotions of their employees before making decisions. Secondly, leaders can offer support and encourage nurses' independent choices and initiatives. They can also provide clear reasoning for the requests they make and the boundaries they set. Finally, they should avoid using controlling language or coercion, aiming to provide non-judgmental feedback and recognition, even in the case of suboptimal outcomes (Reeve, 2015). In addition to these steps, leaders can further demonstrate their trust in their nurses' abilities by providing challenging opportunities for skill development and problem-solving. Ultimately, by creating a supportive and understanding climate between them and their employees, they can contribute to promoting the satisfaction of basic psychological needs, leading to autonomous motivation and effective functioning at work (Deci et al., 2017; Reeve, 2015; Williams et al., 2014).

6.3 | Limitations

The recent study has certain limitations that must be considered when interpreting the results. First, self-reports can affect the results by generating common method bias (Podsakoff et al., 2003). However, it is challenging and less precise to explore individuals' perceptions of their leader as well as their need-experiences and work motivation without using self-reports. Some research shows that self-evaluated work performance results in higher estimates than, for example, other rated work performance (Heidemeier & Moser, 2009; Mabe & West, 1982). The measure of work performance could have benefitted from being assessed with more objective ratings and/or by multiple respondents, such as leaders or colleagues. To eliminate the threat of possible common method bias and ensure construct validity, the current study utilized well-validated measures and ensured satisfactory validity and reliability. In addition, anonymity was assured to all participants, and the invitation emphasized the importance of honesty and the absence of right or wrong answers (Podsakoff et al., 2003).

Secondly, the present study utilized a convenience sample drawn from a population of nurses within a public and municipality context in Norway. The sample was not chosen to be representative of all nurses, and therefore, caution must be exercised in generalizing the results. Further research would be beneficial in replicating the results of the current study across different work contexts for nurses in Norway and abroad. For instance, in 2020, Norsk Sykepleierforbund had 118.846 members, 9% of whom were male members. This study's sample had 3.2% male respondents, which differs somewhat from the demographics of the members of the total nursing population in Norway. One explanation could be that male nurses more often hold leadership positions (Edelmann, 2023). According to Statistisk sentralbyrå (2020), 76% of nurses in municipal healthcare were working in municipal care services, such as nursing homes and home care, while 23% were employed in municipal healthcare services, including general practitioner offices, health clinics and school health services. However, in our sample, we observe a slight variation with 84.5% working in municipal care services and 15.5% working in municipal healthcare services. Local factors or specific hiring practices within the municipality may influence the distribution of nurses among different types of services. Further research and analysis may be needed to better understand the underlying reasons for this discrepancy. Most of the respondents are between 40 and 49 years old (average 42.09 (SD = 11.14)), and representativity is higher among nurses with the lowest service seniority; 0-9 years ($n = 137$) and among those with no continuing education. This limitation could affect the generalizability of the findings to a more diverse nursing population. Yet, the purpose of the present study was to test the links between variables derived from a universal theory assuming that constructs such as basic psychological need satisfaction and frustration, motivational regulations, work engagement, work performance and somatic symptoms are more or less present in all individuals (Deci & Ryan, 2000). The internal validity of the study, that is, the support of the SEM model and the hypotheses

derived from self-determination theory are promising for carrying out future studies attempting to generalize these.

Third, although the sample size ($n=219$) is acceptable in testing the present model with sum score variables (Cohen, 1992), having a larger sample size could provide more statistical power for detecting smaller, yet potentially meaningful, effects in the data. A larger sample size would allow for more robust statistical analyses and potentially increase the generalizability of the findings to a broader population of nurses. Larger samples also provide more confidence in the stability and reliability of the results, which can be particularly important in complex structural equation modelling studies like this one.

Fourth, the study uses a cross-sectional design that only provides a snapshot. The design does not meet the requirement of time order and control for other relevant explanations, and conclusions about a causal relationship between perceived leadership and key psychological factors, including basic psychological needs, motivational regulations and work outcomes, are not possible due to the cross-sectional design. While the hypothesized model has rigorous theoretical support, future research could endeavour to replicate the results of the current study using a longitudinal design to address these limitations.

7 | CONCLUSIONS

The current study illuminates the relationship between two distinct leadership styles and the motivational process for nurses in their workplace. It offers valuable insights into a previously under-explored area of research, namely highlighting a unique “dark pathway” that emerges when nurses perceive their leader as controlling. This path is associated with adverse outcomes facilitated by need frustration and suboptimal work motivation. In essence, rather than viewing perceived controlling leadership and the experience of need frustration solely as indicators of inadequate support and low need satisfaction, we should recognize them as distinctive motivational pathways worthy of further investigation.

Contrary, the findings underscore the significance of perceived autonomy-supportive leadership, need satisfaction and the promotion of optimal work motivation for nurses to perform at their best and maintain high work engagement and health.

AUTHOR CONTRIBUTIONS

Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; KHH, AEMH, KIØ, HH. Involved in drafting the manuscript or revising it critically for important intellectual content; KHH, AEMH, AHO, KIØ, HH. Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; KHH, AEMH, AHO, KIØ, HH. Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved; KHH, AEMH, AHO, KIØ, HH.

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CONFLICT OF INTEREST STATEMENT

No conflict of interest has been declared by the authors.


PEER REVIEW

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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