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Barriers and facilitators for leading nursing homes through the COVID-19 pandemic: A focus group study in Norway

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Abstract

Background: During the COVID-19 pandemic, nursing home leaders implemented infection control to protect residents and staff.

Aim: To understand the barriers and facilitators for leading nursing homes through the COVID-19 pandemic.

Methods: We invited 34 nursing homes to participate, and 20 leaders (59%) attended focus group interviews. The COM-B model and the theoretical domains framework were used in design and analysis of the study.

Results: The barriers for infection control were organisational unpreparedness, high volumes of information, lack of clinical skills, protective equipment, and testing capacity, the nursing home's architectural design, health authorities' low priority of nursing homes, staff's fear, and mental pressure on the leaders over time. The facilitators were having a customised corona plan, change of routines, certification of new skills, access to the municipal quality system, the ability for crisis leadership, loyalty to the nursing home, and support from the environment. The number of part-time positions and the opportunity to outsource parts of the services were also important determinants for infection control.

Conclusions: The results identify several barriers and facilitators for nursing home leaders' behaviour for infection control. The results confirm the importance of supporting the leaders' resilience and crisis leadership while working in the pressurised environment of a pandemic.

Relevance to Clinical Practice: The study provides important insights into barriers and facilitators for leading nursing homes through the COVID-19 pandemic, which could help to inform future strategies for infection control.

Patient or Public Contribution: No patient or public contribution.

KEYWORDS
COVID-19, leader, nursing homes, the theoretical domains framework

1 | INTRODUCTION

In January 2020, the World Health Organisation (WHO) declared COVID-19 pandemic as a public health emergency. As a result, Norway introduced several measures for infection control on March 12, 2020, in order to protect the public (NOU 2021:6, 2021). In the beginning of the pandemic, Norway (like several other countries) lacked intensive care units, infection control equipment, respirators, test capacity and competence for infection control. It was recognised globally that COVID-19 should be prevented from entering nursing homes (Langins et al., 2020) because the age and multimorbidity of the residents made them vulnerable to infection and adverse outcomes (Heckman et al., 2021). In fear of spreading the virus and overstretching specialised care, Norwegian regulations restricted access to acute care for nursing home residents infected with COVID-19. This was also the case in other countries (Langins et al., 2020; NOU 2021:6, 2021).

In Norway, 12% of the elderly population (≥80 years) live in nursing homes. An evaluation of how the Norwegian authorities handled the pandemic (NOU 2021:6, 2021) included a study of the nursing homes (Jacobsen et al., 2021). The report states that during 2020 nearly 50% of all COVID-19-related mortality was in nursing homes, and the highest number of deaths occurred in nursing homes. Nationally, 3% of nursing home residents were infected with COVID-19, and a third of them died (Jacobsen et al., 2021). Nursing homes were under a great deal of pressure at the beginning of the pandemic. However, by March 2021, infection control and the general situation had improved, due to vaccination of residents and staff, better access to necessary personal protective equipment (PPE) and an increased ability to manage infection control (Jacobsen et al., 2021).

The pandemic was a test of organisational preparedness for change, resources, competence, and communication systems. The state of unpreparedness in health care is confirmed by other studies (Fanelli et al., 2020; Hand et al., 2021; Heckman et al., 2021; Jacobsen et al., 2021; Langins et al., 2020; Markey et al., 2021; NOU 2021:6, 2021). COVID-19 research studies have mostly focused on hospitals and intensive care units (Sihvola et al., 2022). An Italian study of health management experts' perspective on how the hospitals managed the crisis reports lack of resources, shortage of beds, personnel and protective equipment, limited coordination, and lack of management plans at the organisational level (Fanelli et al., 2020). Nursing homes in charge of a highly vulnerable group of elderly have received less attention. The low priority given to nursing homes compared to specialised care is acknowledged in two Norwegian studies (Jacobsen et al., 2021; NOU 2021:6, 2021). More generally, having an outbreak in a nursing home is associated with the extent of viral circulation in the local community, older building standards, over-crowding, larger institutions with more traffic, and high staff mobility (Heckman et al., 2021; Jacobsen et al., 2021).

Due to the unprecedented nature of the pandemic, there was limited evidence to guide nursing leaders' practice in 2020, and a call for more research on how nurse leaders managed professional leadership during the pandemic (Hand et al., 2021; Markey et al., 2021). Nurse leaders play an important part in inspiring and empowering health professionals in stressful situations. They are also crucial in promoting the organisation's commitment to a safe working environment and quality care (Markey et al., 2021). In 2021, a study described how Canadian nursing home leaders' experienced an overwhelming workload and mental distress in the beginning of the pandemic (Savage et al., 2022). Studies have also focused on how nurse leaders support other nurses in hospitals and intensive care units all over the world (Sihvola et al., 2022), or the use of innovative solutions in nursing homes and home care services in the beginning of the pandemic (Lyng et al., 2021).

This study aims to fill the research gap and study how nursing home leaders responded to the pandemic situation. What did they do to prevent COVID-19 from entering the nursing home, and to stop the virus if it appeared in elderly residents or in health care personnel? The research question is as follows: What were the barriers and facilitators for leading nursing homes through the COVID-19 pandemic?

1.1 | Background

Human behaviour is the main factor in the transmission of the COVID-19 infection and therefore changing behaviour is essential to prevent transmission. The behavioural sciences can inform guidelines for infection control to prevent the risk of infection and improve interventions to control it (West et al., 2020). Behavioural science seeks to understand psychological, social, and environmental influences on behaviour and offers a range of theory and evidence-based approaches to better behavioural change interventions. One of these models is the COM-B model (Michie et al., 2014). According to this model, you need capability, opportunity, and motivation to perform a behaviour. Capability refers to both the physical and the psychological ability to perform the behaviour. Opportunity refers to the environmental context needed for a behaviour. It can be either a physical (in which people interact) or a social environment (culture and norms; Atkins et al., 2017). Motivation is the psychological energy that initiates and directs a behaviour. Motivation can be broken down into automatic motivation, defined as psychological processes largely out of conscious control (e.g. emotions, habits, and instincts), and reflective motivation, which refers to conscious psychological processes (e.g. intentions and evaluations). The components can interact, and behaviour can again influence capability, opportunity, and motivation through feedback loops. The theoretical domains framework (TDF) highlights in more detail the possible influences on behaviour (Cane et al., 2012; Michie et al., 2014).

TDF has 14 domains that can potentially explain behaviour and represents a theoretical framework derived from 33 theories of behavioural change to assess implementation problems and potential solutions for future improvement (Cane et al., 2012; Michie et al., 2005). The relationship between COM-B and TDF domains with definitions is shown in Table 1 (Atkins et al., 2017). To our knowledge, no study has attempted to understand nursing home leaders' behaviours during COVID-19 using this theoretical framework.

TABLE 1 The relationship between COM-B and TDF domains with definitions.

COM-B modell	The theoretical domains framework
Capability	
Knowledge	An awareness of the existence of something (knowledge, including knowledge of condition/scientific rationale, procedural knowledge, knowledge of task environment)
Memory, attention and decision processes	The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives (memory, attention, attention control, decision making, cognitive overload/tiredness)
Behavioural regulation	Anything aimed at managing or changing objectively observed or measured actions (self-monitoring, breaking habit, action planning)
Physical skills	An ability or proficiency acquired through practice (skills, skills development, competence, ability, interpersonal skills, practice, skill assessment)
Opportunity	
Social influences	Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours (social pressure, social norms, group conformity, social comparisons, group norms, social support, power, intergroup conflict, alienation, group identity, modelling)
Environmental context and resources	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence and adaptive behaviour (environmental stressors, resources/material resources, organisational culture/climate, salient events/critical incidents, person×environment interaction, barriers and facilitators)
Motivation, reflective	
Social/professional role and identity	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting (professional identity, professional role, social identity, identity, professional boundaries, professional confidence, group identity, leadership, organisational commitment)
Beliefs about capabilities	Acceptance of the truth, reality or validity about an ability, talent or facility that a person can put to constructive use (self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, professional confidence)
Optimism	The confidence that things will happen for the best or that desired goals will be attained (optimism, pessimism, unrealistic optimism, identity)
Beliefs about consequences	Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation (beliefs, outcome expectancies, characteristics of outcome expectancies, anticipated regret, consequents)
Intentions	A conscious decision to perform a behaviour or a resolve to act in a certain way (stability of intentions, stages of change model, transtheoretical model and stages of change)
Goals	Mental representations of outcomes or end states that an individual wants to achieve (goals [distal/proximal], goal priority, goal/target setting, goals [autonomous/controlled], action planning, implementation intention)
Motivation, automatic	
Social/professional role and identity	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting (professional identity, professional role, social identity, identity, professional boundaries, professional confidence, group identity, leadership, organisational commitment)
Optimism	The confidence that things will happen for the best or that desired goals will be attained (optimism, pessimism, unrealistic optimism, identity)
Reinforcement	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus (rewards [proximal/distal, valued/not valued, probable/improbable], incentives, punishment, consequents, reinforcement, contingencies, sanctions)
Emotion	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event (fear, anxiety, affect, stress, depression, positive/negative affect, burn-out)

2 | METHODS

2.1 | Study design

This study used a qualitative design with focus group interviews to understand the barriers and facilitators for leading nursing homes through the COVID-19 pandemic. This research is underpinned by a social constructionist paradigm (Braun & Clarke, 2019). TDF provided a theoretical lens, through which to view cognitive, affective, social, and environmental factors, which could potentially influence nursing home leaders' capability, opportunity and motivation, in the content analysis (Cane et al., 2012; Michie et al., 2005).

2.2 | Setting and sample

In Norway, the municipalities are responsible for primary health care, which includes both public health and infection control. The publicly funded nursing home service is offered by both municipal and a few private/non-profit institutions (10%; Jacobsen et al., 2021). The nursing home leader is the highest-ranking manager, responsible for ensuring quality and safety standards, managing human and financial resources, recruiting staff, and developing competency. At smaller institutions, responsibilities may also include ensuring quality of nursing care/practice. In recent years, public subsidy schemes have stimulated the building of new nursing homes and the renovation of older buildings. Most residents now have a private ensuite room (Barstad, 2020). Care of the elderly is often organised in units of eight to 10 residents, whereby one employee usually takes care of one unit/dayshift (8–10 elderly), and two units/nightshift (16–20 elderly). Infection control in a nursing home is regulated by the Ministry of Health and Care Services' program for infection control in health care institutions (Barstad, 2005; Barstad, 2020). Infection control includes all risk assessments including interventions for a safe work environment for staff.

We used purposive sampling to select participants and invited all nursing homes (total number 34) in a major municipality (286,000 inhabitants) in Norway to take part in the study. The nursing home leaders were contacted by e-mail. We interviewed all leaders that agreed to participate. Twenty leaders accepted (59%), representing seven private/non-profit and 13 municipal nursing homes. The main reason for refusing to participate was other work commitments.

2.3 | Data collection

The interview guide had three open questions for each theoretical category to elicit the first response. The questions related to capability, opportunity, and motivation for infection control. The opening questions for each domain was "How did you handle the new information and guidelines for infection control?", "What was the greatest challenge for you as a leader in the beginning of the pandemic?" and "What motivated you for leadership during the pandemic?". In line with recommendations (McGowan et al., 2020), the first questions were followed by a series of prompts to probe more deeply in order to identify potential facilitators and barriers, based on the 14 domains of TDF (Table 1; Atkins et al., 2017; Michie et al., 2014). To avoid becoming entirely theory-driven and overlooking important factors that did not fit within the domains, we added the final question: "Is there anything else you would like to mention in relation to your work with infection control?"

The interview guide was piloted with two leaders to check comprehension and the relevance of the language used, but no further change was necessary. We applied flexibility in the order of exploring the domains to allow for natural conversational flow, e.g. in cases when a respondent volunteered information on a domain not yet covered. After five focus group interviews data saturation was achieved as the participants no longer seemed to provide new information relevant to the study topic (Polit & Beck, 2021).

The first author moderated all focus group interviews, and three of the authors (T.O., S.E., H.S.S.) co-moderated. We performed five focus group interviews (2–7 leaders) lasting approx. 1.5h each; first group included four leaders, second group three leaders, third group two leaders, fourth group four leaders, and fifth group seven leaders. The co-moderators wrote field notes during the interview. Two interviews were conducted at a nursing home (by invitation); the rest took place at the University. Audio-recorded interviews were transcribed verbatim. We also collected background data about the informants. Data collection took place between March and April 2021.

2.4 | Data analysis

The research group are female, state registered nurses, with PhD degrees in nursing or public health. All are currently employed as assistant professors or professors at university level, and have no prior relationship with the participants. All authors have previous clinical experience from nursing homes, as well as conducting and analysing focus group interviews.

All authors read the transcripts and presented intuitive ideas and possible patterns in a first meeting (Table 2). Thereafter, the first author went through the transcripts and coded quotes in line with the COM-B model and TDF domains (Cane et al., 2012; McGowan et al., 2020). All authors then met again to discuss the coding. The analyses were a reflective process that developed over time and involved constant moving back and forward through the data. The themes were actively created from the content within each domain (Braun & Clarke, 2006; see Table 4). This interpretive process was inspired by our personal competence, thoughts, and feelings.

In cases where data could be coded in more than one domain, e.g. architectural design of nursing homes can both hamper (barrier) or promote (facilitator) infection control, the data were distributed to the domain that was most relevant for the aim of the study.

2.5 | Trustworthiness and rigour

Content analysis was performed in line with the steps described in Table 2 to ensure trustworthiness and verification of the analysis (Nowell et al., 2017). The rigour was strengthened by critical discussion in the research group regarding the interview guide. In addition, an active co-moderator supplemented the questions raised. To prevent bias, several researchers with different research experience participated in the analysis process. The reporting of this study is in accordance with Consolidated Criteria for Reporting Qualitative Studies (COREQ; Tong et al., 2007).

2.6 | Ethical considerations

The study is approved by the Norwegian Agency for Shared Services in Education and Research (SIKT) 26 February 2021 (Reference 825960). The participants were informed of the researchers' background and

TABLE 2 Establishing trustworthiness during each phase of thematic analysis.

Phases of thematic analysis	Means of establishing trustworthiness
Phase 1: Familiarisation with the data	The raw data were stored in a central repository accessed by all authors. All authors familiarised themselves with the dataset by reading the transcriptions, before presenting ideas and possible patterns in a meeting
Phase 2: Generation of responses to initial codes	First author went through the transcripts and coded quotes in line with COM-B categories and TDF domains. All authors read this COM-B framework and met to discuss the coding
Phase 3: Search for themes	First author went through the coded framework and identified tentative themes in the content based on quotes under each domain (enablers and barriers). All authors read the coded COM-B framework and met to discuss the themes
Phase 4: Review of themes	For each code, first author read through the quotes again to judge whether they accurately represented definition of the domain and category and revised the initial themes. First and last author met two times to discuss the themes
Phase 5: Defining and naming themes	First author finalised the themes, wrote up the findings of the analyses and selected sample quotes per themes. The total number of themes was reduced, e.g. because themes were incorporated into higher level themes or themes were less relevant to the implementation
Phase 6: Production of the report	All authors provided feedback on the write-up presentation of findings, according to the appropriate revisions of the paper

affiliation, and the aim of the study. The participants were informed in writing and orally of the right to withdraw from the study with no consequences. Interviewees provided informed, written consent prior to data collection. Data were stored in a research server at the University.

When the interviews were finished, researchers gave the informants an opportunity to make contact again if needed. Several informants expressed gratitude to the researchers for their interest in their role as leaders in a pandemic situation. For several leaders, this was their first meeting outside their nursing home since the start of the pandemic, and the first time, they shared their experience with other nursing home leaders.

3 | RESULTS

3.1 | Participants

The age range of the 20 participants were from 40 to 67 years (Table 3). All but one (occupational therapist) held a bachelor's degree in nursing, and all had further continuous professional education Their current role was being the leader of a nursing home. Mean years in current role was 9 years, and mean years of practice within health care for the elderly was 23 years.

The analysis revealed several barriers and facilitators of leaders' behaviour for infection control. Fourteen themes were identified; five related to capability, five related to opportunity, and four related to motivation (Table 4). The themes are presented below under the overarching COM-B model.

3.2 | Capability

Both psychological and physical determinants affected capability for infection control. The barriers for capability were an overwhelming

amount of information, and lack of skills. The facilitators for capability were development of a customised corona-plan, changed routines of practice, and training and certification.

3.2.1 | Psychological capability for infection control

Barriers: An overwhelming amount of information
At the beginning of the pandemic, national and local public authorities produced what the leaders characterised as an overwhelming amount of (sometimes conflicting) information. The rapid changes of information challenged their ability to customise procedural knowledge to the individual nursing home. This work was done primarily by the leader, or in cooperation with their emergency group (see description below). As one of the leaders said:

> It's not just about getting information and implementing a procedure. Everything must be assessed against the situation in my nursing home, my patients, or with my employees.
>
> (L3)

Facilitators: Development of a customised corona-plan
At lockdown on March 12, each leader organised an emergency team within their nursing home to lead infection control work. The group members varied, but usually included ward/unit leaders and people representing important functions at the nursing home, e.g. kitchen and cleaning services. The leaders, often in cooperation with the emergency team, reviewed all the information received, selected what they considered most relevant for clinical practice, and customised it to the local task environment and available resources. In the beginning of the pandemic, this work took most of their time. The customised corona plan was changed several times in the beginning of the pandemic and each revision had to be communicated to all staff.

TABLE 3 Nursing home leaders' demographics (N=20).

Variable	N
Year of birth	
1954–1959	4
1960–1964	5
1965–1969	5
1970–1974	2
1975–1979	0
1980–1984	4
Education	
Nursing bachelor's degree	19
Occupational therapy, bachelor's degree	1
Gender	
Female	17
Male	3
Years of practice	
Present position, mean	9
Primary health care of the elderly, mean	23
Present position	
Leader of the nursing home	15
Leader of nursing practice with lead responsibility for infection control	3
Leader of the nursing home, including responsibility for nursing practice	2

Facilitators: Changed routines of practice

The leaders immediately closed the nursing home doors and restricted visitors from entering the premises. All social activities were discontinued. To inhibit the spread of COVID-19, leaders organised clinical work in cohorts, limiting the staff's contact with residents. They reduced the flow of personnel between wards, and staff with part-time positions in more than one nursing home were restricted to work at one location. Some leaders voluntarily isolated themselves in their office and communicated with staff via digital platforms. Usual channels of sharing information, e.g. face-to-face meetings, were replaced by digital platforms, such as Teams. The leaders used social media platforms like SMS messages, Facebook, or Workplace to send information about, e.g. new clinical procedures or advising staff to quarantine. While these platforms were invaluable in updating staff, leaders had problems reaching all employees:

> Our nursing home has many employees with Norwegian as their second language, 50 in total, and not everyone reads mail. We had an activity group on Facebook, a closed group, and we started using it very early. That is probably one of the biggest success factors we had. I sent the information 11 o'clock every day, and when the afternoon shift arrived, they were up to date.
>
> (L17)

3.2.2 | Physical capability for infection control

Barriers: Lack of skills

Even if the nursing homes had outbreaks of influenza and norovirus from time-to-time, the staff had never trained in procedural skills for an infectious disease. Even before the pandemic, continuous professional education and skills training were recognised as challenging. Part-time employees were hard to reach for training because they were otherwise employed. Some lacked the computer skills to access digital educational resources. Others had problems reading the Norwegian language. The leaders described the problems with reaching everybody:

> It applies to all age groups. There is no real difference … So, we go around asking: did you read yesterday's email? No, haven't got it? We send by email, and on Facebook, and we try to reach them as best we can, but there is always someone we do not reach.
>
> (L13)

Facilitators: Training and certification

The leaders initiated new training sessions for staff in the use of PPE and infection control. They tightened the requirements, and all personnel had to be certified in the clinical procedures before they were allowed back to work. To reach as many as possible, some leaders made educational videos of each procedure, as one leader explained:

> We put quite a lot of work into making videos, understandable for everyone, without text. Even if they can read, they do not necessarily understand. So, we made small films of the most important procedures, for example handling waste and handling clothing.
>
> (L8)

3.3 | Opportunity

Opportunity for infection control was affected by environmental context, resources, and social influences. The barriers for opportunity were restricted test capacity and lack of PPP, limitations in architectural design, and a culture of fear. The facilitators for opportunity were access to a quality system, having an internal cleaning service, and cooperation and support.

3.3.1 | Environmental context and resources for infection control

Barriers: Restricted testing capacity and lack of PPE

COVID-19 testing capacity in nursing homes was restricted and slow at the beginning of the pandemic. This was because

TABLE 4 Illustrative quotes of the nursing home leaders' behaviours for infection control with themes mapped to the COM-B model.

COM-B model	Sources of behaviour	Theme	Barrier/ enabler	Example quote
Capability	Psychological	An overwhelming amount of information	B	Filtering out information … I did not send everything (I received) to the others. I went through it first. Otherwise, we would have drowned the ward leaders. (L15)
		Developed a customised corona-plan	E	No matter what procedure you were looking at, you had to go from A to Z in a way …. We prepared our own corona plan, adapted to our nursing home. (L12)
		Changed routines of practice	E	Our traditional information channels were not sufficient to handle the amount of information (we received), and not as effective as we needed it to be. The information changed several times a day. So, we created a closed Facebook group to inform the employees. (L8)
	Physical	Lack of skills	B	It surprised me how much time we spent on training (skills) … I am a nurse, and went through my entire education, without ever being close to infections or infection control. But as a nurse you have been in and out of sterile procedures, so you know some things. And we noticed a big difference, nurses learned it faster. They were used to thinking sterile/unsterile, clean/unclean. While for the other personnel, it was not logical at all. (L9)
		Training and certification	E	We hurriedly put together an infection control program for all employees to learn how to dress/undress. And we repeated it, to reach everyone …. Then we made online courses for the various occupational groups. (L3)
Opportunity	Environmental context and resources	Restricted test capacity and lack of protective equipment	B	The employees who work at the hospital had direct access to testing. I was so frustrated, I thought I was going to explode. Our employees had to join the usual (public) queue. They were tested on Thursday, and we got the answer on Monday. While hospital employees got an answer in 3–4 hours. (L2)
		Limitations in architectural design	B	Our nursing home is very tall, with four floors, and 12 residents on each floor. Very inappropriate …. So, we commute and walked up and down two floors. It is not very appropriate when there is an infection, or you are afraid there be an infection. (L9)
		Access to a quality system and having an internal cleaning service	E	When the municipal quality system started to publish procedure after procedure…you could just click on and see the latest updates. It was very nice …. You can take out posters for visitors and stuff like that. (L17)
			E	We have our own (cleaning service) …. that clean the house, but also do the laundry, meaning we can wash the equipment ourselves. It helped us a lot when we lacked equipment. We had good people, well trained for the job. We had our own dedicated cleaning staff with total control on infection washing. It was a wonderful resource to have in the house. (L12)
	Social influences	Culture of fear	B	Many were very scared and thought we should close (down). There was a lot of that fear, and they were afraid of carrying the infection (inside). (L7)
		Cooperation and support	E	The meetings with the municipality were very good. It's Friday 10.30 a.m. and you meet the municipal management on Teams. It's very professional. (L2)

TABLE 4 (Continued)

COM-B model	Sources of behaviour	Theme	Barrier/ enabler	Example quote
Motivation	Reflective	Mental pressure	B	We have had one outbreak, and know how demanding the situation is, and the follow-up afterwards. But my experience is that we as leaders get nothing …. We must do follow up, we must support, we must be prepared, to track infections, do debriefing. We do all that. (L19)
		Crisis leadership	E	I have become much clearer and tougher. It has to do with being calm, and military structure; Do what I tell you! If you have someone who is very indecisive, you need to control them …. I feel the style (of leadership) has changed considerably. It is pure crisis management. You are the captain of the ship and distribute and delegate tasks and expect feedback …. There is no gibberish. Not at all the leadership style I'm used to. (L13)
	Automatic	The nursing homes' low priority compared to specialised care	B	What provoked me the most was using glasses meant for shooting up fireworks. We wore them when we had outbreaks, and we wore them during all practical training. During a breakout (November 2020), I mentioned them to the emergency room personnel. They told me that you must not wear those glasses. They do not meet with the standard. And these glasses we wore during the entire outbreak. (L8)
				It is no wonder that it is difficult to constrain the infection in nursing homes when the equipment is so poorly. (L9)
		Pride and loyalty to the organisation	E	You ask what made us endure it. It is the loyalty to the nursing home. The organisation that you are the leader of a sense of responsibility …. At first, I thought «I cannot stand it». I have just been through a big reorganisation and rebuilding. I cannot take on more challenges. But then, you know, the alternative is to fail. So, you go in, of course, and deliver. (L15)
			E	I feel proud, being in this job. I am proud to be a nurse, I am proud to be a leader in times like this. (L10)

specialised health care, where the analyses were performed, prioritised internal tests (staff, patients). Nursing home staff had to use a public test centre and test results took days to return. In the meantime, staff waited in quarantine and residents were isolated in their rooms. It took 8 months before the authorities established daily routines for the collection of COVID-19 tests at the nursing homes and speeded up delivering the results. Another practical problem was that the staff re-used facemasks, hoods, and coats when practicing the correct use of PPE. This was at a time when they were ordered to keep social distance (2 m). One leader described it like this:

> In practical training, the dilemma was whether to practice for real and throw the gear in the litter, or not. We could not do that, and that meant that staff practiced in the same clothes that I wore. At the same time, we are not allowed to sit closer than two meters!
>
> (L6)

Barriers: Limitations in architectural design

The nursing homes were buildings of varying standard and architectural design: some were new, and some were on a waiting list for refurbishment. The leaders explained how the physical surroundings and architectural design promoted or prevented behaviours for infection control. One leader described the situation like this:

> We have three different buildings. One was built for a pandemic. That was amazing. One was built for social activities, no opportunity to shield anything. One was from 1920. We were glad the roof was still on.
>
> (L7)

Facilitators: Access to a quality system and having an internal cleaning service

The municipality has a digital quality system which hosted, among other things, COVID-19 information posters and education material. By the end of 2020, the municipality also gave private/non-profit

nursing homes access to these resources. The quality system was highly valued in the leaders' fight for infection control.

Some nursing homes had outsourced the cleaning service which meant the cleaning staff commuted between several institutions, including in one case a kindergarten. Having an internal cleaning service was considered a great advantage in infection control:

> It made our situation easier to have a cleaning service close by. The leader for cleaning is part of the management team and the emergency group. She knew all procedures, and her employees. It was a huge advantage.
>
> (L12)

3.3.2 | Social influence opportunity for infection control

Barriers: Culture of fear
The leaders spent a lot of time calming the staff who were afraid of the virus. One leader described the staff on a ward with a breakout infection as a "culture of fear" and "hysterical" (L2). Staff from other wards were also afraid to meet staff from the infected ward in the corridors. Some leaders worried that staff might develop post-traumatic stress syndrome, and they discussed the need for professional counselling to support their staff. One leader, who had experienced five breakout infections, described how she met the fear:

> The fear of being the unfortunate one who brings the infection into the nursing home. We have spent a lot of time discussing it, and it was necessary to reassure and support them. They have no (personal) fault in this. And the wards who have not had an infection yet, are not afraid of being infected themselves, they say. They are afraid of being the ones who give us leaders a huge amount of work and expose other employees for quarantining.
>
> (L12)

Facilitators: Cooperation and support
The pandemic increased cooperation and support between the nursing homes. After one nursing homes had a major breakout at the beginning of the pandemic, they started to help each other by sharing practical tips, e.g. pre-packed boxes with the necessary equipment for a breakout or short educational videos, as mentioned earlier. One leader called it "a culture of sharing" (L8). When asked who supported them as leaders during their fight for infection control, all leaders rated their emergency group as their most important source of support. However, the leaders also listed residents' families and positive feedback as valuable support. Even though residents were separated from their close ones, leaders felt that relatives accepted the restrictions and supported them. Some leaders began to send newsletters to relatives, which turned out to be a great success:

> I made it a routine to send mail to all relatives. In the beginning, I sent almost daily messages to all relatives. Then three times per week, twice a week, once a week. I have never received so much praise from relatives. It was incredible.
>
> (L20)

Looking back, some leaders commented that support from the local health authority was mostly moral support at the beginning of the pandemic. By March 2022, the support also included practical support, e.g. online educational courses for staff and help with contact tracing if residents or staff caught COVID-19 infection.

3.4 | Motivation

Both reflective and automatic motivation affected the leaders' behaviours for infection control. The barriers for motivation were mental pressure, and the nursing homes' low priority compared to specialised care. The facilitators for motivation were crisis leadership, and pride and loyalty to the organisation.

3.4.1 | Motivation for infection control: reflective

Barriers: Mental pressure
All leaders experienced ethical dilemmas. It was against their ethical principles to isolate elderly residents or prevent them from having visitors. They shared stories about the challenges they experienced in relation to older people with dementia ("It's simply awful" L14). To secure the care of residents infected with COVID-19, leaders were also responsible for managing employees' risk of infection. This responsibility felt particularly heavy due to lack of PPE:

> The guidelines said full personal protective equipment in cases of a suspected or confirmed infection. I had employees who cared for suspected infected residents, who were sent to quarantine, or who became ill because they did not have PPE. I must live with that, being responsible for exposing people to high risk in their job.
>
> (L9)

The leaders described being on high alert during the pandemic. Many negative emotions were uncovered in expressions like; "I felt such a fear" (L1), "being alert all the time" (L10), "enormous amount of work...felt like drowning" (L16), "mentally exhausting over a long time" (L9). As a result of pressure over time, some leaders expressed demotivation or said they were unlikely to take future jobs in nursing management.

The leaders went to great lengths to support their employees in the pandemic, but who supported them as leaders? For some, the focus group interview was the first time they had been asked about

their experiences. There were many negative descriptions, e.g. "we are alone…there is little support…and in the end, we get all the criticism" (L10).

Facilitators: Crisis leadership

During the first period, when the Norwegian nursing homes were in lockdown, the leaders changed their way of leading from being autonomous supportive of staff, to what they called "crisis leadership". The local health authorities had told them earlier to "prepare for war". The leaders described the new role as: "giving orders" (L14), "captain of the ship" (L12), "be authoritarian, make quick decisions, do not question, do not reflect, just do it!" (L8). This was very different from their previous style of leadership. The staff, however, seemed to accept the change:

> They needed to be controlled, and not make decisions. Tell me what to do, and I'll do it. No one asked questions and said why, as they otherwise do 15 times before landing anything. And it felt incredible. The ward leaders did the same, and it was accepted.
>
> (L4)

Visible leadership became important, and staff expressed a need to hear, see and feel the leaders' presence in the nursing home. After a year with the pandemic, the nursing homes had the necessary PPE and skills for infection control. The leaders were now confident that they could manage a breakout of COVID-19. They expressed pride in what their nursing home had accomplished and how much they had learned in the last year (e.g. "more than in 20 years normally (L8)", "staff are so competent, they just know what to do" (L9)). However, what really changed their beliefs about the consequences of a breakout was that both residents and staff had received their first dose of the vaccine.

3.4.2 | Motivation for infection control: Automatic

Barriers: The nursing homes' low priority compared to specialised care

At one point, a local nursing home had more COVID-19 cases than the two local hospitals combined. Several leaders mentioned this incident and expressed frustration at the way nursing homes were treated by health authorities. Specialised care had better access to testing and PPE, even though nursing home residents were at a greater risk of illness and death due to COVID-19. In the beginning of the pandemic, the nursing homes had to hand over their supply of PPE to the municipality:

> There was a lack of face masks, and we handed over our stock (to the local authority). At the same time, employees at NN hospital received face masks to use to and from work. Such things are terribly unnecessary. They have 13,000 employees to whom they give

face masks. The municipality could have done the same for us. We received questions from our staff: Can we also get face masks for public transport? We got a clear message from the municipalities to say no. So, how can a large player do the exact opposite? We must do better; it is important to treat everyone the same way

(L2)

Facilitators: Pride and loyalty to the organisation

The leaders felt motivated to lead during the pandemic, and obligated by loyalty to their organisation, staff, and residents to take this responsibility. In the first 3 months of the pandemic, they worked many hours each day and, because they had problems relaxing when they finally went home, some of them moved into the nursing home. One leader explained:

> One is very triggered in an emergency and crisis. From March until the summer of 2020, we were on high alert absolutely all the time. And there was no room for not being motivated. As head of the institution, you should also make sure to keep the motivation up with the others.
>
> (L8)

They felt proud of being a nurse (only one leader was not a nurse) and of how the organisation handled the pandemic. Their motivation was reinforced by feedback and support from the staff. They were all "on the same team and against an external enemy" (L9). Previous conflicts between staff vanished, and staff absence due to illness was lower than ever before.

4 | DISCUSSION

This study used the COM-B model in development of the interview guide and data analysis. By focusing on capability, opportunity, and motivation for infection control, we identified several of the TDF's 14 domains as barriers or facilitators for the nursing home leaders' behaviours.

All three COM-B components could explain leaders' behaviour for infection control. Their *capability* was hampered by organisational unpreparedness, an overwhelming amount of information from health authorities and the lack of procedural skills. Their *opportunity* was affected by restricted testing capacity, lack of PPE, limitations in the nursing homes' architectural design, and fear among staff. Their *motivation* was hampered by the mental pressure over time, and the low priority nursing homes had in the eyes of the health authorities, compared to specialised care.

However, the *capability for infection control* was facilitated by a customised corona plan, a change of routines for practice and certification of staff's new skills. The *opportunity* was supported by access to the municipal quality system, having an internal cleaning

service, receiving support from relatives of the elderly residents, peer nursing homes, and the local health authorities. _Motivation_ was facilitated by the leaders' ability for crisis leadership and their pride in, and loyalty to, their nursing home.

4.1 | Nursing home leaders' behaviour for infection control

Our results show a lack of organisational preparedness for a pandemic in nursing homes. The leaders had no strategic plan, they lacked information about the virus, had limited PPE, and restricted testing capacity. The state of unpreparedness in health care is confirmed by several studies (Hand et al., 2021; Heckman et al., 2021; Jacobsen et al., 2021; Langins et al., 2020; Markey et al., 2021; NOU 2021:6, 2021). The leaders' primary barrier for infection control at the beginning of the pandemic was the volume of rapidly changing information from national and local health authorities on how to handle the new virus. A poorly coordinated communication strategy to the nursing home leaders was also the case in other countries (Behrens & Naylor, 2020). Sometimes leaders had to make decisions that were contrary to their professional ethical judgement, e.g. when isolating residents, or ordering staff to care for potentially infected residents without PPE. Other studies have also confirmed ethical dilemmas in nurse leadership during the pandemic (Jacobsen et al., 2021; Markey et al., 2021; Savage et al., 2022).

The leaders in this study also described how their professional role changed from consensus to crisis leadership. Nurses' leadership in crisis situations is considered to be the most critical element of crisis resolution (Kim, 2021). A scoping review has described crisis leadership as: (1) clear, fast, frank communication; (2) a high degree of collaboration; (3) sharing of information; (4) decision-making and fair prioritising; (5) building trust; (6) communication skills and competence (Kim, 2021). These attributes are crucial to promote patient safety, empower staff to respond to the situation, provide the ability to move from the here and now to a future state, and to instil loyalty and motivation in employees to change behaviours (Kim, 2021). The nurse leader's role and strategies for management during the COVID-19 crisis are also identified in other studies (Hand et al., 2021; Markey et al., 2021; Savage et al., 2022).

Our results show how nursing home leaders spent much time and effort in being a visible leader. They found innovative ways to calm, support and acknowledge staff who was afraid and anxious, either due to their clinical work or in relation to their family situation. The importance of leadership visibility and the ability to build trust is also described in several nursing studies (Hand et al., 2021; Jeffs et al., 2020). A recent review emphasise the importance of a relational leadership style and using skilled communication and collaboration with staff members (Sihvola et al., 2022).

This study identifies how a lack of support and mental stress in the nursing home leaders over a long time period, lead to reduced motivation to take up future leader roles within nursing. This unanticipated end to a career due to heavy workloads and exhaustion is confirmed by others (Savage et al., 2022). Leaders in the present study expressed strong negative feelings. They felt alone with the responsibility and the criticism. The leaders' main source of support came from within their organisation, and especially from colleagues in their emergency team. The low priority given to nursing homes compared to specialised care is acknowledged in several studies (Behrens & Naylor, 2020; Jacobsen et al., 2021; NOU 2021:6, 2021).

Unresolved stress may result in burnout (Markey et al., 2021; van Dijk et al., 2022) and a crisis such as COVID-19 can lead to anxiety, depression, stress, and post-traumatic stress disorder (Brady et al., 2022; Kim, 2021; Savage et al., 2022; van Dijk et al., 2022). It is also possible that the way some of these nursing homes are organised (private, non-profit organisation) impacted on leaders' experience of limited environmental support in the beginning of the pandemic. The nursing homes organised by the municipality were in closer contact with the local health authority and seemed more satisfied with the environmental support. However, more research is needed to understand if and how the facility's organisation impacted on the leaders' behaviours. It is interesting to note that in January 2021 the Norwegian Institute of Public Health's guidelines on COVID-19 control asked the municipality to coordinate both municipal and private, non-profit organisation, in order to deal with the many infected residents (Norwegian Institute of Public Health, 2021). From this moment, the local health authorities gave all nursing homes the same help during the pandemic.

The content and functions of the digital "infection control meetings" between the local health authorities and nursing homes developed over time. After a year, the meetings were considered important and appreciated by all leaders, e.g. when there were outbreaks. The national evaluation of how the Norwegian authorities handled the pandemic confirmed that the nursing homes had to find solutions by themselves. In the future, they recommend regulating cooperation and learning across all nursing homes (NOU 2021:6, 2021). Internationally, central accountability and coordination of COVID-19 breakouts in care homes were also lacking. Some countries implemented similar sets of measures as the "infection control meetings", e.g. outbreak teams to support and monitor infections at national and regional level (Langins et al., 2020).

4.2 | Nursing homes leaders' resilience during the pandemic

Our study revealed how leaders aimed to protect patients and staff during the pandemic. Several studies of nurse leaders' behaviours during the pandemic focus on their resilience (Buheji & Buhaid, 2020; Duncan, 2020; Jeffs et al., 2020; Lyng et al., 2021; Sihvola et al., 2022). Resilience is described as the ability to reflect and cope with heavy workloads, long hours, an absence of information, rapid

decision-making, ethical dilemmas, and the prioritisation of scare resources (Sihvola et al., 2022).

Nurse leaders need to develop their own professional resilience before they can motivate and empower their staff (Markey et al., 2021), e.g. by using coping strategies, positive language and by building their own efficacy (Duncan, 2020). National and regional health authorities have a strategic role in developing networks and competency-based training programs for nurse leaders to respond and recover from the crisis (Kim, 2021). The results of this study indicate that the gradual development of "infection control meetings" between local health authorities and nursing homes met the leaders' need for environmental and social support. It may thus have contributed to professional resilience overall.

4.3 | Supportive and safe working environment

Nurse leaders not only have an important role in inspiring and empowering nurses but are also crucial in supporting the organisation's commitment to a safe working environment and quality care of (Markey et al., 2021). The risk of infection, together with restricted testing capacity, led to fear and stress among staff, a common problem in the pandemic throughout the world (Buheji & Buhaid, 2020; Jeffs et al., 2020; Langins et al., 2020; Markey et al., 2021; Savage et al., 2022).

Some nursing homes lacked the required infection control program customised to the individual nursing home. However, even if they had the strategic document, the national regulation of nursing homes do not take the physical buildings into consideration (Barstad, 2020). Critics now call for a systematic change to improve the leaders working condition, the quality of care and quality of life for the residents (Savage et al., 2022). The leaders in this study gave several examples of how the architectural design and infrastructure of the nursing home inhibited new routines for infection control. Our results are confirmed by other studies (Bærum kommune, 2020; Fylkesmannen i Vestland, 2020; Heckman et al., 2021; Jacobsen et al., 2021). The county governor's report on the nursing home with the highest death rate among residents in Norway, described old buildings, over-crowding, shared rooms and bathrooms, staff moving between wards and floors, and restricted testing capacity (Fylkesmannen i Vestland, 2020). Some argue that architectural design and the built environment should be included in the national regulation of nursing homes, together with an assessment of all conditions potentially related to infection control (Barstad, 2020; Heckman et al., 2021).

The results of this study identified how outsourcing of the cleaning service increased the risk of spreading the virus, when cleaning staff commuted between several workplaces. Other studies confirm how high staff mobility coupled with older building standards, over-crowding, and larger institutions with more traffic, are associated with having an outbreak in a nursing home (Heckman et al., 2021; Jacobsen et al., 2021). A high staff mobility is also the result of a staffing policy with many part-time positions (Boge, 2020; Jacobsen et al., 2021; NOU 2021:6, 2021). Our results confirm that a high number of part-time employees made it extra demanding to train staff in infection control. This is recognised as a common problem in many countries, especially when it comes to qualifications and training (Laxer et al., 2016). In the recovery from COVID-19, the impact of high staff mobility on the risk of spreading the virus has led to a call for more optimal staffing policy in nursing homes (Boge, 2020; Heckman et al., 2021).

4.4 | Limitations

The use of focus groups involves limitations. The recommended size for a focus group composes of 4–12 people. The group must be small enough for everyone to share insights and large enough to provide diversity of experiences (Krueger & Casey, 2000). A group of two to three participants may therefor result in a smaller pool of ideas and represent a limitation. On the other hand, some participants may feel intimidated by more experienced and dominant group members, and this could affect their willingness to share experiences, and thus reduce the generalisability of the results. The use of a small purposive sample of leaders in a major municipality means that these views may not be representative of all nursing home leaders. Including other nursing homes across the country might have added more variation in the data. In terms of our analysis, a deductive approach can potentially restrict findings to the COM-B components and TDF domains, at the risk of becoming entirely theory-driven and overlooking important factors that do not fit. To prevent this, the last question in the interview guide opened the floor for non-TDF material. The responses did not add anything significantly different. However, a more inductive approach might have opened for other themes. Also, the fact that all researchers were registered nurses may have influenced interpretation of the results.

5 | CONCLUSIONS

Barriers for infection control were organisational unpreparedness, high volumes of information, lack of clinical skills, protective equipment, and testing capacity, the nursing home's architectural design, health authorities' low priority of nursing homes, staff's fear, and mental pressure on the leaders over time. The facilitators for infection control were having a customised corona plan, change of routines, certification of new skills, access to the municipal quality system, the ability for crisis leadership, loyalty to the nursing home, and support from the environment. The findings also indicate that the amount of part time positions, and the opportunity to outsource parts of the services, were important determinants for infection control. The results confirm the importance of supporting the leaders' resilience and crisis leadership while working in the pressurised environment of a pandemic.

6 | RELEVANCE TO CLINICAL PRACTICE

The study provides important insights into barriers and facilitators for leading nursing homes through the COVID-19 pandemic, which could help to inform future strategies for infection control. This study expands current knowledge by embedding data collection and analysis within behaviour change theory to help inform future strategies for infection control based on both theory and research evidence.

CONFLICT OF INTEREST STATEMENT
The authors declare that there is no conflict of interests.

DATA AVAILABILITY STATEMENT
Research data are not shared.

ETHICS STATEMENT
The study is approved by Norwegian Agency for Shared Services in Education and Research (SIKT) (Reference 825960).

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