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Nursing decision-making for health policies during the COVID-19 pandemic in Europe: the ENVISION study

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Abstract

Background The participation of nurse leaders in decision-making has been described as vital for healthcare organisations. However, their involvement in health policy-making is still suboptimal and their contribution is frequently unnoticed. This study aimed to understand the contribution of nurse leaders in decision and policy-making during the COVID-19 pandemic to inform future health crisis management.

Methods A qualitative study using a thematic approach was carried out together with the European Academy of Nursing Science between January 2022 to December 2023.

Findings 74 nurse leaders from 14 different European countries were interviewed. During COVID-19 pandemic, nurse leaders contributed to redesign nursing care delivery, opening COVID wards, designing vaccination units, and readapting nursing students' curricula. Nurse leaders addressed the uncertainty through shared decision-making, based on real-time knowledge and available evidence. Self-confidence, empathy, and the ability to adapt to a changing situation were considered essential to fulfil their professional duties. Due to the lack of effective ready-made solutions, nurse leaders were concerned about the consequences of their decisions throughout the pandemic, generating feelings of anxiety and uncertainty.

Conclusion The pandemic made the role and competence of nurse leaders more visible, highlighting the importance of their contribution to healthcare systems.

Implications for nursing and nursing policy The results of this study highlight the urgent need for healthcare systems to improve their preparedness for future health crises. Moreover, due to the fundamental contribution that nurse leaders had on the management of the pandemic, from clinical to educational settings, the position of nurse leaders in decision-making processes must be strengthened.

Keywords Nursing, Nurse leadership, Decision-making, Health policy, Covid-19 pandemic, Health crisis, Preparedness

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Background

Every day, nurse leaders make decisions that are relevant for clinical outcomes [1], and which also may influence policies [2]. Decision-making is therefore a fundamental component of nursing practice and represents one of the core elements at each level of the profession, from decisions in the clinical arena to the influence of international policies [2].

Decision-making is generally recognised as the process of making choices, and the capacity to take, act, and follow a decision. Decision-makers usually follow a sequence of different steps. Firstly, they identify a problem and gather information. Subsequently, they seek solutions, recognising possible alternatives and choices. The end of the process consists of planning and analysing the consequences of the decision taken [3]. In the context of health policy, decision-making is recognised as the process of selecting and implementing actions or strategies that can influence the organisation, delivery, and financing of health services to promote the general health and well-being of individuals and populations [3].

Recent years have seen an increase in nurses' participation in managerial and political decision-making, such as resource allocation, care pathway planning, development of guidelines and public health policies [4]. Nurses' involvement in health policy is, however, still suboptimal [5]. Nurses are recognised as knowledgeable decision-makers at the clinical level, but they often lack opportunity and access to appropriate training to be able to influence political decision-making [5]. The World Health Organization (WHO), in collaboration with the International Council of Nurses and the *Nursing Now* campaign, advocates for nursing inclusion in decision-making to amplify the voice of the largest healthcare group, enhancing care across all settings and transitions [6]. A recommended solution to enhance nurses' readiness for policy development and strengthen global nursing leadership is to provide opportunities for improving leadership, autonomy, and communication skills through capacity-building and personal development programmes [7].

Different factors could hinder nurses from participating in health policymaking. Professionally, the lack of awareness of policy issues and processes, knowledge, and leadership skills to implement decisions at the health policy level still limits this participation [8]. Furthermore, nurses perceive a series of professional specific obstacles that limit their participation, such as feelings of inadequacy and powerlessness [8], or perceptions about low levels of autonomy [2, 8]. Nurses are often limited to implementing policies, reducing their confidence in understanding the full policy cycle [5, 9]. Organisational factors, such as heavy workloads and lack of managerial support, further hinder their participation in health policy decisions [9]. These aspects reduce the time that

nurses may spend on training and activities associated with policy making, as well as developing self-esteem and motivation for health policy decisions [2, 5, 8]. The complex interplay of gender-based societal factors significantly hinders political participation. According to WHO, gender bias in nursing limits women's participation in health policy decision-making compared to men [6, 10].

The COVID-19 pandemic significantly impacted nursing care, with nurses seeking to deliver high-quality care despite challenges [11]. Numerous health policy decisions were rapidly implemented to address the urgent challenges posed by the situation [12]. Alongside other healthcare professionals, nurses played a crucial role in making significant decisions during the COVID-19 pandemic. These decisions were frequently not brought to the public's attention, but their contribution went unnoticed. The decisions made by nurses positioned at different hierarchical levels – managerial, tactical, strategic, or political [13] – during the pandemic were, therefore, not described or represented publicly. Decisions made were often reported anecdotally and focused primarily on clinical aspects of nursing [14]. Those aimed at influencing health policies were not highlighted [5]. Analysing nurses' decision-making processes during the pandemic can illuminate the critical value of their active participation in healthcare planning. This extends beyond clinical considerations, emphasising their vital role in shaping health policy decisions even after the pandemic emergency has subsided.

Theoretical framework

The term '*decision*' refers to a formal judgement, evoked by stimuli or crises needing a solution [15]. Decisions imply a commitment to action to identify a resolution for a problem [16, 17]. Specifically, the concept of '*decision-making*' is defined as the process of making choices, the capacity to take, act, and follow a decision [18]. Literature allows the identification of four core elements characterising decision-making: situational awareness, antecedents, decision, and consequences (Fig. 1). Before decision-making could take place, situational awareness is fundamental, as it describes the ability to perceive the presence of a problem in a specific context [19]. Acknowledging the problem also means having a holistic perspective, considering the environment, and foreseeing the potential consequences [19, 20]. Once the problem has been identified, Noone et al. [16] and Materson et al. [21] theorised the presence of antecedents in any process of decision-making. Antecedents help decision-makers identify possible solutions. They encompass the factorisation of the main issue into simpler elements, collaboration, shared responsibility, information, and seeking solutions considering available human and

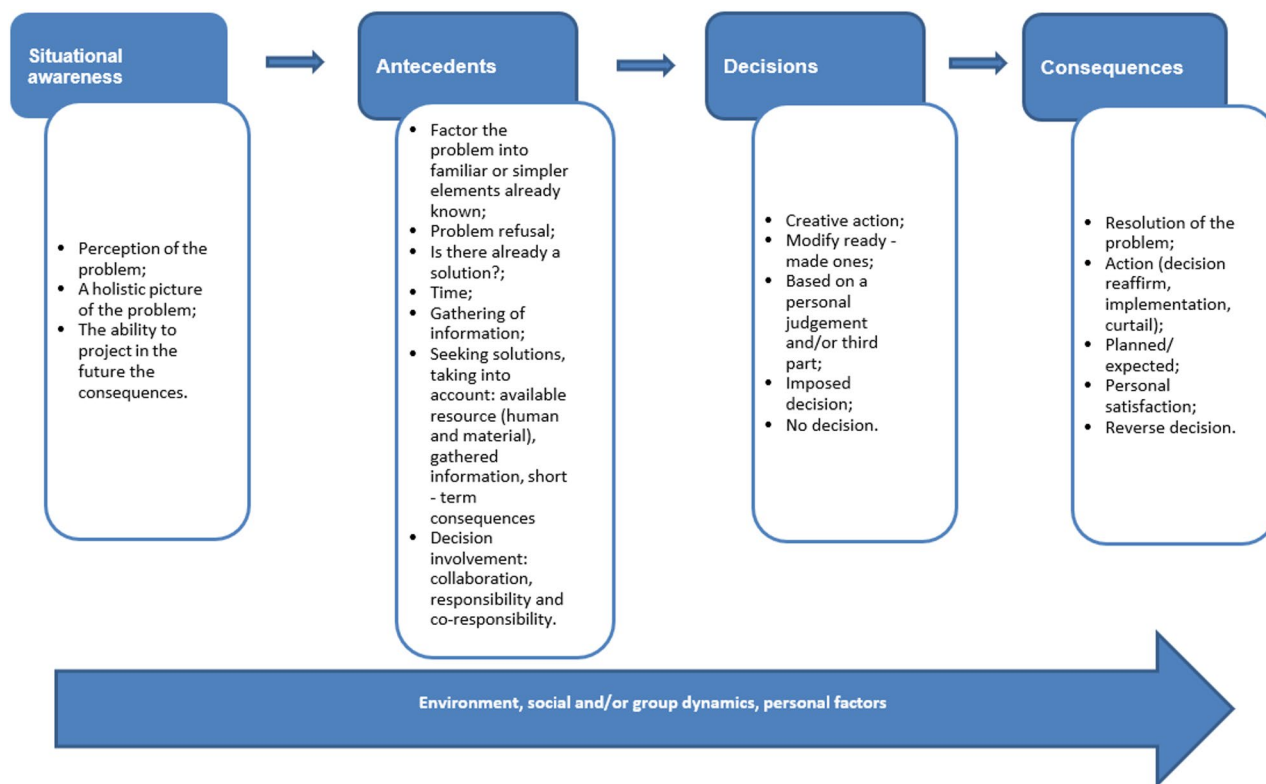


Fig. 1 Core elements characterising decision-making process

material resources, gathered information, and short-term consequences.

The decision represents the moment of choice between two or more options. Five types of decisions are possible: (i) no decision, when the decision makers ignore or procrastinate the necessity to make a choice, such as delaying the revision of a nurse-to-patient staffing policy despite evidence of increased workload and adverse patient outcomes [22]; (ii) imposed decisions, when the decision makers cannot choose independently because of an executive decision, such as enforcing a staffing model mandated by hospital administration or health authorities without input from nursing leadership [23]; (iii) creative actions, when the decision makers introduce creative choices, designing a custom made solution, such as developing a new nurse-led care pathway tailored to the needs of a specific patient population [17]; (iv) modify ready-made decisions, when the decision makers do not implement innovative solutions but try to adopt the past ones, such as reapplying an existing clinical protocol with minimal updates to address a new healthcare context [15]; (v) decisions based on a personal judgement and/or third part, when decision makers do not evaluate risks and alternatives carefully, but they are influenced by personal prejudices or third part, such as adopting a nursing policy based primarily on senior clinicians' opinions

or external consultants' recommendations rather than empirical evidence [15].

To evaluate the magnitude of the decision, Noone et al. [16] and Matterson et al. [21] underlined the importance of considering the consequences that decisions elicit. Every decision could solve the initial problem, reaffirming the solution consistently, or worsen the situation, highlighting the need for a different solution [16, 17, 21].

Three main levels differentiate decision-making in healthcare organisations: clinical, managerial, and political. *Clinical decision-making* refers to the intuitive and analytical process of making an informed judgment over the treatment necessary for a patient [24], while *managerial decision-making* refers to the systematic process by which managers at all organisational levels analyse problems, evaluate alternatives, and select a course of action to achieve specific goals [25]. *Political decision-making* describes the process by which individuals or groups make choices and implement governance actions at a broader level through *policy-making* [26]. Being involved in policy decision-making is a powerful means to advocate for effective and equitable services. In healthcare settings, nurses, due to their daily interactions with individuals and communities, can play a pivotal role in defining policies [27].

Worldwide, nurses represent the largest proportion of healthcare workers, provide care to patients and families

in hospital and community settings, and are the most trusted, thanks to the values that characterise the profession [28]. The acquired skills, knowledge, and close daily relationship with patients make them key stakeholders and active participants in health policy-making [29].

Overall, decision-making is a complex and multi-dimensional process influenced by the environment, social dynamics, personal and/or group dynamics [30]. Changes in the environment may interrupt, delay some steps of the process or, in some cases, impose the necessity to take immediate decisions. Still, can modify the problem itself, making necessary another reflection on the factors that constitute the problem. Moreover, decisions are influenced by social and group dynamics [31]. Unexpected implementation of organisational rules or the promulgation of a law can both simplify and nullify the entire process. Moreover, each person is a bearer of values, beliefs, and experiences. As highlighted by Mintzberg et al. [15], political activities are also fundamental in the decision-making process, because they reflect the influence of individuals who try to satisfy their personal and institutional needs.

Aim

Our study aimed to understand the contribution of nurse leaders in the role of health policy decision-making during the COVID-19 pandemic, informing for future health crisis management. Our secondary objectives were to describe the role and factors that influenced the decision-making process, the most relevant decisions made by European nurses during the COVID-19 pandemic, and their consequences.

Methods

Design

A descriptive study using a thematic qualitative approach was conducted. The European Academy of Nursing Sciences due to its commitment to studying health policy decision-making, was asked to participate by the principal investigator (MC). A steering group of Nursing professors from 14 universities with a PhD level of education was formalised in December 2021 to conduct a study on the participation of European nurses in health policy decision-making during the COVID-19 pandemic (the ENVISION study). The ENVISION study lasted 24 months, from January 2022 to December 2023. The study is reported according to the COnsolidated criteria for REporting Qualitative research (COREQ) [32]. (See Supplementary Table S1. Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist).

Sample and participants

A purposive sampling approach was employed to ensure both specificity and diversity in the roles of nurse leaders.

The sample included nurses from 14 European countries who were involved in health policy decision-making during the COVID-19 pandemic. To maximise the diversity of roles, participants were recruited from the tactical, strategic, and political levels. The tactical level included nurses whose decisions were made at a ward or department level, such as middle managers who coordinate a group of head nurses. The strategic level represented nurses who contributed to plan and achieve actions at a hospital or community level; an example could be nurse managers responsible for a hospital or a community district. The last included nurses engaged at a political level who usually have the power to insert a specific topic into the political agenda or who are part of a political association, a committee, or a professional board that could influence the decision-making process at one of the other levels, such as those working for municipalities or ministries. Nurses who made decisions at a ward level (i.e., head nurses) or made decisions on clinical aspects, such as patient positioning and triaging were excluded. To achieve a balanced representation between European regions and nursing roles, at least one participant was included for each role for each country. Therefore, we assumed that a minimum of 42 nurses were included in the final sample.

Instruments

The interview guide was developed by the steering group who had previous experience on qualitative research. Based on the presented theoretical framework, literature on decision-making in nursing, four dimensions were identified, representing the evolution of the decision-making process: (1) role definition, (2) antecedents and criteria of the decision, (3) actual decision, and (4) consequences. The steering group agreed on the sequence and specific questions during online meetings. The final version of the interview guide was composed of 21 open and closed questions. Each question included in the interview guide has been designed to allow researchers to record and categorise the responses obtained from participants quickly. The final version of the interview guide was drafted in English, and each of the members of the steering group translated it into their language; an external collaborator for each country validated the translated final interview guide. The interview guide was tested in three countries on three nurses who met the inclusion criteria. These nurses were not included in the final sample.

The interview guide is available in the Supplementary Material (Table S2. ENVISION study: Interview Topic Guide).

Study procedure

Study procedures were harmonized across each country. Harmonization consisted in monthly meeting between the steering group. Procedures guidelines were agreed and shared before the beginning of data collection. Each member of the steering group identified participants within their country according to inclusion and exclusion criteria. Each potential participant received detailed information on the purpose of the study and data collection procedure, the informed consent form, and a copy of the interview guide to be examined in advance. If they agreed to be included in the study, participants were interviewed face-to-face or using an online meeting platform. Members of the steering group in their country conducted interviews in their own language. The one-to-one interviews lasted approximately one hour. The responses provided by the participants were extracted simultaneously by the interviewers following the interview guide, listing or reporting a brief transcription of the sentences in their own language. Each interview was audio recorded to assess the fidelity of the extracted data and no repeated interviews were carried out. For this purpose, the research assistants listened to the recorded interviews and checked the quality and completeness of the transcriptions, integrating quotes, and correcting errors. This validation allowed us to gather any missed details during the interview, and ensuring a rapid study resolution. Additionally, the awareness among interviewers that a quality check would have been performed allowed them to focus on the essence of the interview and not on reporting information. Finally, this double-check system allowed the information to be translated in English without any concern during the interview. Interview transcripts were returned to participants to check for accuracy. After the validation of each interview, the data from each country was transcribed into a common extraction spreadsheet that was shared with the steering group, merged, and analysed.

Data analysis

Data were analysed using a team-based descriptive thematic analysis [33], chosen for its flexibility and consistency with the objective, methodology, and decision-making process dimensions of our study aim. The analysis was conducted in conjunction with data collection and the findings were compared between methods and data collection sources, against the original themes and data set [34]. The principal investigator worked in parallel with a group of three researchers experienced in qualitative analysis to analyse the data emerging on each of the four dimensions that make up the interview guide. Data were inductively analysed applying the six phases of (i) familiarisation with the data, (ii) initial coding, (iii) theme generation, (iv) revision, (v) definition, and (vi)

validation [34]. A qualitative data analysis software was used, Atlas.ti version 8.1 [35], and the analysis of occurrence of identified codes and themes between nurse leaders' work positions was performed to identify possible patterns of decision within roles [36].

Data about antecedents and criteria closed questions were described through frequencies and percentages using participants as denominators.

Trustworthiness and credibility

To ensure data saturation and trustworthiness, key patterns were observed in 90% of the interviews, with the remaining 10% was used to confirm and validate the results. Consensus on key findings was achieved through triangulation and discussions with the steering group and participants. Credibility and dependability were ensured using an audit trail, verbatim transcription, and member checking with a subsample of participants [37].

Ethics

The principal investigator obtained main ethical approval (University of Torino n. 0202731). Based on local ethical policies, each gatekeeper of each country requested approval in local ethical boards. All required local approvals were obtained before data collection commenced in each participating country. The informants received written study information, and, prior to inclusion, written informed consent was obtained. Participants were informed that they could decide not to answer questions they were not comfortable with and that they could withdraw from the study at any time. Informants were pseudonymised by the gatekeepers and the collected data was treated confidentially. A data transfer agreement was signed between the principal investigator and the gatekeepers or the gatekeepers' institutions. The pseudonymised data were analysed by the principal investigator team; the participants remained anonymous to the other gatekeepers and could not be identifiable in any way in the research reports.

Results

Sample description

A total of 74 nurses from 14 different European countries were identified ($n=5$ Cyprus; $n=5$ Denmark; $n=6$ Finland; $n=4$ Germany; $n=5$ Greece; $n=6$ Italy; $n=4$ Kosovo; $n=8$ Malta; $n=9$ Portugal; $n=4$ Slovenia; $n=5$ Spain; $n=3$ Sweden; $n=5$ Switzerland and $n=5$ United Kingdom). No potential participants refused to participate to the study. The main characteristics of the sample are presented in Table 1.

In general, four main themes, characterising the decision-making of nurse leaders during the COVID-19 pandemic, were identified (Table 2) and the patterns of theme occurrence withing nurse leaders' work positions

Table 1 Characteristics of the participants (n = 74)

Characteristics	
Sex (female), n (%)	55 (74.3)
Age, mean (SD); [range]	51.1 (7.5); [33–66]
Education, n (%)	
Bachelor degree	4 (5.4)
Master degree	39 (52.7)
PhD	22 (29.7)
Other	9 (12.2)
Work position, n (%)	
Strategic	41 (55.4)
Tactical	15 (20.3)
Political	10 (13.5)
Committee/board	8 (10.8)
Title, n (%)	
Director	11 (14.9)
Nurse manager	36 (48.6)
Senior nurse	12 (16.2)
Other	15 (20.3)
Experience in the current position, mean (SD); [range] years	7.4 (6.2); [0,7–33]
Experience in a leading position, mean (SD); [range] years	12.9 (7.8); [1–40]

were analysed (See Supplementary Table S3. Themes occurrence among nurse leaders' work positions).

Redesigning nursing care delivery

Nurse leaders decided how to allocate the workforce to guarantee appropriate care, contributed to the development of health policies, and put local regulations into practice. This included different responsibilities, such as optimising the nursing workforce, providing personal protective equipment (PPE), planning clinical and emergency care pathways, contributing to the design of health policies, guidelines, and implementing local regulations.

Overall, the management of human resources and the reorganisation of clinical settings were cross-cutting issues for all nurse leaders, regardless of their specific work position.

In relation to nursing shortage and healthcare service congestion, human resources management was one of the core aspects of decision-making of nurse leaders. This included the reorganisation of staff schedules with the temporary allocation of nurses in different services, but also the recruitment of new nurses due to staff shortage. In particular, nurse leaders positioned at the strategic level dealt with the potential deployment of nursing students who wanted to give their contribution to the pandemic management in the field.

Difficult to say what you were responsible for. [...] Responsible for ensuring patient care, for the implementation of clinical requirements for the depart-

ment, joint responsibility for the organisation of the care of corona patients, responsible for hygiene issues, but also for convincing employees about vaccination, ward organisation, procurement of materials, new digital applications due to changed staff deployment; despite the pandemic situation, it was about the recruitment and retention of employees (Nurse Director, Germany)

Additionally, nurse leaders had to reorganise clinical settings due to sudden and exponential increase in the number of COVID-19 patients, opening new departments, converting regular wards into COVID-19 dedicated units, activating a specific helpline to relieve the burden on the Emergency Centre and optimising the contact tracing system. Moreover, nurse leaders were actively involved in the epidemiological control service through COVID-19 testing and, to a lesser extent, in the organisation of vaccination hubs.

Since healthcare systems were not prepared to deal with a pandemic, and Coronavirus pathogenesis was unknown, health policies, and guidelines were needed to support healthcare professionals in exercising their profession and to prevent additional spreading of COVID-19. Consequently, at the hospital, regional and national level, nurse leaders working at strategic and committee/board levels were asked to provide situation reports and their professional advice to guide governance decisions, such as visiting restrictions. Moreover, they delivered specific education and training on how to provide care minimising the risk of contagion.

Some important duties were that I was the coordinator of various projects, for example, the registration of covid cases. [...] A second role that I had was to represent my department on the epidemiological map committee, which made recommendations about the needed measures at the prefecture and municipality levels. Later I also got involved in the development of an application for tracing COVID cases of others and the ones they had contact with. (Senior Nurse, Greece)

The university created videos which were published on YouTube to update staff in nursing homes. It was critical for the staff to know how to take off a mask, how to act during a break, how to take out a rubbish bag, etc. This was not part of their regular practice before. (Nurse Director, Switzerland)

Even though healthcare systems were suffering from nursing shortages, a minority of nurse leaders across all their different work positions suspended nurses who refused to vaccinate. Nurse leaders had the responsibility

Table 2 Identified themes and categories

Themes	Sub-themes	Illustrative quotes
Redesigning nursing care delivery	Management of human resources	<p>"One of my main tasks included the staff schedule, the organisation of care in the sense of having enough nursing staff, or making the appropriate changes and transfers of staff to meet the needs that arose. Obviously, I was very involved in the recruitment of new nurses, I was also in charge of interviewing staff, this was something that was done in the midst of a pandemic". (Nurse manager, Greece)</p> <p>"The main activities were the reorganisation of nursing care in the family health unit where I have leadership functions, due to the need to allocate resources to areas dedicated to respiratory units, vaccination in home settings, monitoring in COVID-19 tracing, travel of team members for COVID-19 vaccination in vaccination centre and school settings.". (RN, Portugal)</p>
	Deployment of nursing student	<p>"The first one [decision] I would describe was around the use of student healthcare students during the pandemic. [...] So additional workforce was a really, really key part of this and healthcare students were really a logical decision that both us and lots of other governments around the world took as being an option. So working with our stakeholders, our midwifery council with our university sector and we, you know we have to rapidly develop a national policy around the deployment of students and things." (Senior nurse, England)</p> <p>"We had to identify available resources in the health network. Set up telephone hotlines for health staff, patients, and the public (with students and retired health professionals)." (Nurse manager, Switzerland)</p>
	Reorganisation of clinical settings	<p>"The urgency of the situation required decisions to be taken quickly. We opened a unit within 8 h." (Nurse manager, Portugal)</p> <p>"Opening and closing units according to the waves of the pandemic, considering the modularity of spaces." (Nurse manager, Italy)</p>
	Design of vaccination units	<p>"With the start of vaccination, [we] organise the location, personnel, preparation of lists of candidates for vaccination and control, and reporting on compliance with the vaccination strategy." (Nurse manager, Slovenia)</p> <p>"It was a unanimous decision. A proposal was made to the regional Ministry [of Health.] There was no previous experience in mass macro-vaccination centres" (Nurse Manager, Spain)</p>
	Provision of guidance to governments	<p>"We have a very particular role in advising the government around different approaches to decisions that the government would have taken or did take as part of the pandemic so you know they, they would seek advice from us around different things they would need to do (Senior nurse, England)</p> <p>"[I have a] Political role, involved in various meetings and working groups in relation to Covid handling in Denmark at a political level including ministerial level" (Member of National Nursing Council, Denmark)</p>
	Application of regulations	<p>"Political decisions, e.g. about compulsory vaccination, had to be supported, even if sometimes there were other professional opinions" (ND, RN with a strategic position, Germany)</p> <p>"Stopped all the visitors except in the patient in critical condition" (Head of Nursing Inpatient services, Cyprus)</p>
Decision-making process	Nature of the decisions that need to be made	<p>"Never took decisions alone." (Senior lecturer, Malta)</p> <p>"Some choices were also more or less imposed by the region and by regional political will, which did not lead to us being able to determine what to do." (Nurse manager, Italy)</p>
	Criteria guiding decision-making	<p>"The decision was made on the basis of new, real-time knowledge, because until then no one had encountered such a large epidemic and its consequences". (Nurse manager, Slovenia)</p> <p>"National authorities guidelines were good to follow when making decisions" (Medical responsible nurse in municipality, Sweden)</p>
Decision-making individual characteristics	Role-specific competence	<p>"I also tried to be very careful thinking in my competence at the decision making to not exceed my competence limits". (Director, Spain)</p> <p>"Competence is important but not many skills are required. Somehow you just grew into it". (Nurse manager, Germany)</p>
	Personal and interpersonal attitudes	<p>"I'm a person who is self-confident. Of course, the opinion of others is always important. After all these years I always get reviews, some good and some not so good. But in general, because I know how to do my job, I love what I do and I do it with selflessness" (Nurse manager, Greece)</p> <p>"We immediately asked ourselves how we could be helpful to our colleagues." (Nurse manager, Italy)</p>
	Cognitive capabilities	<p>"Whenever you make a decision, it's always a risk. In order to make a decision you collect some data, you talk to colleagues, to other organizations. So personally, for each decision I make, I try to support it, because if I made that decision, it means that I saw and understood something that lead me to that decision." (Public health adviser, Greece)</p> <p>"The scenario is changing, it is dynamic, and you must adapt". (Nurse manager, Spain)</p>
	Emotions	<p>"Personally, the feeling of restlessness has been continuous. The situation was changing, and the information that we had was not verified. This situation of uncertainty generated me a lot of anxiety and concern. (Director, Spain)</p> <p>"Making decisions in emergency cases has much more tangible and painful consequences, so it must be taken into account that decision-making is always accompanied by uncertainty. Uncertainty increased due to the fact that it was an emergency response" (Professor/researcher, Kosovo)</p>

Table 2 (continued)

Themes	Sub-themes	Illustrative quotes
Desirable outcomes of decision-making, at a price	Historical lack of structured nursing involvement in decision-making	"What nursing lacks in our country - and I know that some people may not want to hear this very much - is the more active involvement in nursing everyday life of people who are in decision-making positions." (Nurse manager, Greece) "I wish this study could convey the potential that nurses, regardless of their hierarchical grade, may have in managing a disaster. All nurses can play a role and their competence should not depend on their hierarchical level for the function they are performing." (Senior nurse, Portugal)
	Renewed way of conceiving the nursing profession within the public and politics	"Nursing has been placed in the public spotlight. Citizens have seen everything we do. We are capable of leading; they must invest and believe in us." (Nurse manager, Spain) "In my role, I already knew how important the role of nursing is. The health system would completely collapse if there were no nursing care of a high-quality standard and sufficient quantity, the population has seen that. The importance of understanding the added value of nurses has been made clear, in any case." (Nurse Manager, Switzerland)
	Reorganisation of curricula of nursing schools	"My main role at the time of the first wave was rapid re-organisation of nursing degree programmes; rapid re-organisation for practice learning – for the first year students who were removed from practice – and also those in community placements – which were stopped. [...] and the re-organisation of the curriculum. (Senior nurse, England) "[We] transformed teaching into an online environment" (Professor/researcher, Cyprus)
	Emotional distress due to the made decisions	"Due to the pandemic, my degree of participation in the decision-making increased. This crisis included us constantly in the decision-making. It was very stressful, you didn't have time to plan, there was tension, staffing shortage, a market that had no new nurses to offer. It was very stressful." (Nurse manager Greece) "I was afraid of overburdening the faculty staff. I should have made more of an effort to analyse the consequences of the decisions made and of the context." (Nurse Manager, Switzerland)

of ensuring the respect of regulations to protect patients and healthcare professionals, even if that meant losing additional workforce on the field.

There was the sad part about the suspension of unvaccinated health workers, but there was no room for our own action, but for the state. (Nurse manager, Greece)

Nurse leaders contributed to the management of an unprecedented health crisis and tried to support their colleagues through guidance and education as much as possible despite multiple challenges.

Decision-making process

Decision-making process was characterised by shared decisions, creative solutions, available evidence and resources. Over 74 participants, 74.3% ($n=55$) declared that decisions were shared between team members and only in 15% of cases ($n=11$) they were made independently. Generally, not all decisions were ready made, but in most cases they were derived from a creative approach ($n=36$, 48.6%) and less frequently they were imposed ($n=10$, 13.5%) or ready-made solutions ($n=15$, 21.6%).

Every decision was taken together, we've had authorization, but we also had to work in groups (Nurse Manager, Kosovo).

The most relevant criteria used during the pandemic to prioritise decisions was related to the presence of human resources for nurse leaders positioned at tactical,

strategic, and committee/board levels, whereas information availability was the most important criteria employed by political nurse leaders. Compared to nurse leaders positioned at strategic, political and committee/board levels, nurse leaders at the tactical level had to maintain a high degree of flexibility in their decisions, adapting to the daily changes according to the evolution of the epidemiological situation. Nurse leaders positioned at the strategic and political level took in high consideration the availability of material and environmental resources to make their decisions, while committee/board nurse leaders relied mostly on co-responsibility between members. It should be noted that regardless of their work position, time was an important criteria guiding nurse leaders' decision-making (Table S2).

The institution's Crisis Staff met daily, and adjusted its decisions on the fly based on the changes that occurred daily. [...] The decision was made on the basis of new, real-time knowledge, because until then no one had encountered such a large epidemic and its consequences. (Nurse Manager, Slovenia)

Overall, it should be highlighted that decision-making did not underestimate the implications of their decisions, as most (58%) of the participants felt worried about making decisions during the pandemic because they were uncertain about the possible resulting consequences on people's lives.

Decision-making individual characteristics

Professional and individual characteristics influenced the ability of the participants to make decisions. Nurse leaders positioned at strategic and political level felt that their leadership supported them in the decision-making process, while nurse leaders positioned at tactical and committee/board level relied more on their experience. Among the professional and individual characteristics influencing the decision-making ability, role-specific competencies, personal and interpersonal attitudes, cognitive capabilities, and emotions can be acknowledged. Role-specific competencies refer to the set of skills, knowledge, and behaviours developed through experience in the working position that decision-makers should possess to provide proper response in emergency situations, such as relying on critical thinking, checking for accuracy and evidence of information, evaluating pros and cons, simplifying problems to adapt and respond to the situation.

I think you become capable when you are put in such a situation. I haven't really thought about this. I think it's a competence you achieve along the way. You can't say that you had experience because you have never been in a situation like this before or even something remotely similar. I'm comfortable with the decisions I made, I think I have a good eye for whom to look out for and what to be aware of. Yes, I think others considered me to be qualified. (Senior nurse, Denmark)

Self-confidence and team collaboration supported decision-makers to influence other actors while being empathic, when necessary, in interpersonal relationships. In addition, cognitive skills such as the ability to be responsive and flexible helped nurse leaders at every level to better analyse the situation and develop a strategy accordingly. Nurse leaders positioned at political level had to be able to set priorities and compromise, while nurse leaders at strategic and tactical level had to show their ability to justify the reasons under their decisions. Lastly, uncertainty was the most important influencing factor for the decision-making process for nurse leaders at tactical and political levels, while at the strategic level concern was more prevalent. In fact, uncertainty and concern, together with unpreparedness, resulting from managing a health crisis for the first time experienced by our participants, contributed to a sense of fear and stress in decision-making.

Due to the pandemic, my degree of participation in decision making increased. This crisis included us constantly in decision-making. It was very stressful, you didn't have time to plan, there was tension,

staffing shortage, a market that had no new nurses to offer. It was very stressful. (Nurse manager, Greece)

For nurse leaders, COVID-19 Pandemic represented both a learning experience and an opportunity to demonstrate their skills in decision-making and leadership in complex situations. Even if emotional burden was common, awareness of possessing skills and experience as a leader acted as a facilitator for decision-making.

Desirable outcomes of decision-making, at a price

The impact of nurse leaders' decisions contributed to elevate nursing social value, optimise care, and preventive behaviours of the population, and guarantee nursing education, but often led to physical and psychological burden.

Nurses reported a historical lack of active involvement in decision-making, feeling that their contribution has often been functional to solving specific situations without a real willingness to engage them strategically in the chain of policy making affecting healthcare organisations and the nursing profession. However, the role and the efforts of nurse leaders during the pandemic showed their potential in the management of health crises.

I think nursing management is little recognised within health institutions. Important organisational and management actions are assigned to us, but we are not listened (to) when power decisions are made, decisions that generate important changes. (Nurse manager, Spain)

The involvement and efforts of nurse leaders contributed to a renewed perspective of conceiving the nursing profession within the public, politicians, not nurse leaders, healthcare organisations, and the media. The pivotal role and competencies of nurses became more evident from the care process to management responsibilities, increasing the social value of nursing.

The role of nursing leaders has become more visible, the position of nursing leaders has strengthened (Nursing director, Finland).

However, the decisions of nurse leaders also had consequences they perceived as negative, leading to emotional distress and energy consumption among the nursing workforce due to inadequate nurse staffing and colleagues leaving the profession permanently, contributing to the existing phenomenon of nursing shortage.

Some colleagues we failed to avoid losing them. Despite everything, it is not entirely the responsibility of the society. One of the members of our ethics

committee resigned. Despite working, talking, meeting, we have not been able to retain valuable people who have also invested so much in the profession. (Nurse manager, Italy)

In particular, nurse leaders were aware that forcing nurses to change working units created insecurities and anxiety among them, with an increase in perceived workload.

Even if nurse leaders tried to act as best as they could, they felt they were not able to provide appropriate emotional and organisational support to nurses.

The transition of employees, to work in a new place with new things. So, it turned out to be exactly as we suspected, very traumatic for many and that in turn led to reconsidering "do I want to work here, do I want to work with this?". [...] You choose to work in healthcare because you want to help others, and if you then feel that it was very traumatic, it is a shame that that commitment is killed. (Nurse manager, Sweden)

The reorganisation of the curricula of nursing schools represented an additional element of concern for nursing teachers and professors, which required flexibility and adaptation to the continuous changes imposed by the pandemic. Unlike theoretical classes, it was clear that clinical internships could not be held fully online for the duration of the pandemic. At the same time, it should be noted that the clinical placements of students were complicated by the lack of PPE, the shortage of nursing staff and the exhausted nursing staff that could not be overloaded with the responsibility of monitoring nursing students.

All the nurses were very tired at the time and receiving students would mean an added difficulty. Then, all the expenses: the services began to ask that the students had to bring PPE, so there were huge expenses with the students coming every week to pick up PPE to take to the services. (Senior nurse, Portugal)

E-learning and the suspension of clinical internships raised concerns about compromising future nurses' competence.

I was able to anticipate this notion that students may leave the degree with fewer competencies, namely in terms of instrumental skills and clinical judgement/decision-making, which are important elements for autonomous practice. (Professor / researcher, Portugal)

Nursing professors and researchers endeavoured to maintain the highest quality of education by identifying solutions that balanced the fulfilment of nursing learning objectives with safety. They alternated between periods of in-person clinical internships and periods where training had to be suspended or adjusted to different schedules. *"As it happened in every country, it was difficult to cope with the new and emergency, since it was something sudden and unfamiliar. Many actions were forced to be cancelled (e.g., face to face training). However, progressively, the educational sector had managed to adapt and shift to alternative modes of training"* (Member of the educational sector of the Nursing Services, Cyprus)

An additional challenge for nurse leaders, related to clinical internships, was handling the individual choices of undergraduate students on whether or not to be deployed in the clinical field, and the complaints and threats of the families of undergraduate students. In fact, some students really wanted to be part of the pandemic response and contribute, while other students were frightened. Fear was also common among students' families, raising feelings of anger because they did not want to risk the safety of their offspring.

I eventually had to turn my direct messages off my Twitter account because I had quite a lot of people contacting me. Really saying why are you sending my son or daughter into this with no protection, and you've got blood on your hands. You'll be judged in the human rights court. [...] as a leader, you know, I'm paid to take these tough decisions, but you know, stuff like that does get to you. (Senior nurse, England)

The unpredictable effects and long-term consequences of their decisions combined with the need to act quickly caused nurse leaders to feel overwhelmed. To cope with their deep emotional burden, nurse leaders try to adopt a more collaborative approach within their teams, opting for shared decision-making and reliance on available evidence. Moreover, they considered the pandemic as a learning experience that made them realise the urgent need for healthcare systems to enable a more efficient response to future similar situations.

Looking back, I missed COVID hectic work. Learned and grew as a team. Huge learning experience. Grew as a manager and much better prepared for future pandemics - currently working on preparedness for possible Ebola pandemic and writing a book on the experience to leave to successors and as a historical record of these times. (Not available, Malta)

Nurse leaders frequently reported how the pandemic represented a global health crisis that nobody was prepared for. However, they put all their efforts into ensuring the best quality of care in a context debilitated by nursing shortage, lack of PPE, dissatisfaction with imposed visit restrictions, and lack of effective ready-made solutions to follow. Nurse leaders believe they have proved their competence and their value in decision-making in a very complex situation.

Discussion

This study aimed to understand the contribution of European nurse leaders to decision-making during the COVID-19 pandemic, focusing on influencing factors, key decisions, and their consequences to enhance awareness for future health crisis management. Our findings highlighted the significant efforts of nurse leaders positioned at tactical, strategic, political, and committee/board level in managing the pandemic, including reorganising clinical settings, optimising care access, advising governments, ensuring nursing education, and training colleagues on safety procedures. Unsurprisingly, the management of human resources and the reorganisation of clinical setting were cross-cutting issues among all nurse leaders' work positions, regardless of their country of origin.

Undoubtedly, the COVID-19 pandemic represented a critical moment in which healthcare professionals constantly sought guidance on the implementation of safe behaviours [38]. Notably, in our study, such guidance did not originate from political nurse leaders, but rather predominantly from scientific societies, thanks to nurse leaders engaged at committees/boards levels. This may be attributed to the urgency of the situation, which required political nurse leaders to focus on broader health crisis management, limiting their ability to provide practical guidance insights.

Guidance was not an exclusive need of healthcare professionals on the clinical field, but also of nurse leaders who were required to make important decisions in the absence of definitive knowledge. To overcome this situation of uncertainty and fulfil their roles, nurse leaders adopted different criteria and individual characteristics upon which base their decisions. Specifically, our results showed that nurse leaders positioned at the political level relied more on information availability and on their ability to set priorities and compromise compared to nurse leaders holding lower leadership roles. In fact, it is known that political decision-makers truly value the importance of information to orient their decisions and sustain their proposals within the public [39] while leaders positioned at more functional level, such as tactical and strategic leaders, tend to prioritise the availability of human resources due to the immediate practical nature of their decisions

and their closer daily contact [40]. Other than specific criteria, role-specific competence and personal attitudes acted as barriers or facilitators for nurse leaders' decision-making. Consistently with published literature, nurse leaders at strategic and political levels attributed significant importance to their leadership competencies, whereas experience is the factor judged to those at lower leadership positions believed that their experience in the role enabled their decision-making competence [41, 42].

In the absence of ready-made solutions, nurse leaders, regardless of their work position, relied on shared decision-making, considering different perspectives in a non-hierarchical manner. Concurrently, during a health crisis, without effective known solutions and with the need to act quickly, reaching a definitive agreement could be more challenging and time-consuming [43]. This uncertainty underscored the need for disaster management plans to enhance healthcare system preparedness [44]. In critical situations, the lack of predefined protocols was addressed through new strategies, such as leveraging experience and creative thinking to develop situational solutions [45]. Creative decision-making fosters innovation by gathering relevant information, brainstorming solutions, and implementing the best approach with flexibility for real-world adaptations [46, 47]. During the COVID-19 pandemic, nurse leaders adopted creative and innovative strategies to address constantly evolving challenges. Most decisions were not imposed by governments, except for measures like mandatory vaccination. Despite the difficulties, the pandemic drove innovation, enhancing competencies such as telehealth adoption, flexible problem-solving, and sensitivity to public health management [48].

Notwithstanding nurse leaders are required to think creatively to fulfil management responsibilities, the potential consequences of these decisions resulted in emotional distress in our participants. Nurse leaders faced significant challenges during the COVID-19 pandemic, taking difficult decisions that often led to emotional distress. They had to act quickly, relying on real-time knowledge or instincts, and confronted various ethical dilemmas. The scarcity of PPE caused moral distress, contributing to intentions to leave the profession [49]. Ensuring adequate PPE distribution during future pandemics is crucial. The suspension of healthcare professionals refusing vaccination and visitation bans, though necessary, were ethically questionable and highlighted the need for a more inclusive approach in future health crises [50, 51].

Globally, nursing education was also impacted, with modifications and suspensions of theoretical and clinical experiences [52]. Nurse leaders questioned the preparedness of students graduating during the pandemic, as staff shortages limited the availability of experienced nurses to mentor them [53]. This underscores the need for health

crisis preparedness plans and training in nursing education programmes.

Despite the acknowledged importance of nurse leaders in decision-making, their engagement in health policy and leadership remains suboptimal [54]. Previous studies indicated that nurse leaders were often confined to implementing decisions made by non-nurse leaders [5]. Our findings suggest that while nurse leaders' involvement increased during the pandemic, there is concern it was limited to pandemic resolution, reflecting a broader marginalisation of the nursing profession.

Concerns about the nursing leader shortage have been raised [55]. The COVID-19 pandemic highlighted the need for an inclusive approach to health crisis management. Given the positive impact of nurse leaders on healthcare outcomes [56], it is crucial to regularly involve them in multidisciplinary decision-taking, beyond emergency situations. Barriers to their participation include lack of knowledge, skills, support, negative perceptions, and insufficient resources [8]. Historically, nurses moved into leadership with high clinical expertise but lacked specific leadership knowledge [57]. Despite educational investments, a gap remains between acquired competencies and involvement in policy-making [5, 7], negatively influencing the preparedness of healthcare systems to effectively respond to health crisis [44].

Nursing leadership development is currently embedded in nursing curricula [58] and multiple international educational initiatives (e.g., Nursing Now Campaign) [6] have been developed to increase the nurses' voice in policy-making. Consistently more training programmes are needed to foster nurse leaders' preparedness for health crisis management. Research is needed to understand the impact of existing leadership educational programmes on active involvement in decision-making. This would facilitate a deeper understanding of the factors hindering optimal nurse leader involvement and their preparedness for disaster management, enabling us to determine whether leadership programmes require revision to cultivate a culture of nursing decision-making, or if a fundamental shift towards participatory policy-making through the formal reorganisation of healthcare management structures, clearly defining stakeholders, responsibilities, actions, and relationships, is the critical pathway.

Strengths and limitations

The high degree of representativeness in this study, spanning 14 European countries and multiple hierarchical levels of nurse leadership, enhances its significance. Moreover, this study was the result of iterative processes shared among the members of a leading nursing scientific society. Nonetheless, even with these strands our results could be not fully transferable worldwide due to differences within roles, decision-making processes and healthcare funding systems.

Also, other limitations should be noted. The involvement of different countries led to a longer timeframe for initiating the study due to the need to acquire ethical consent from every organisation and translating the study materials. Additionally, the absence of countries like Belgium and The Netherlands, where nurse leaders have significant decision-making roles, could limit the application of the findings. Moreover, our exclusion of frontline charge nurses, whose decisions are made at the ward level, limits the insights our findings can offer into point-of-care decision-making. While this decision was made to maintain analytical focus on policy-level decision-making, future research should incorporate frontline perspectives to provide a more complete account of nursing decision-making across all hierarchical levels.

We acknowledge that gatekeeper-mediated recruitment may have introduced selection bias, as organizational contacts may have preferentially identified certain types of participants based on factors we could not fully control. While participants were recruited from the tactical, strategic, and political levels from different countries and at least one participant was included for each role and for each country, some degree of selection bias remains inherent to our qualitative approach. Interviews were performed between 2022 and 2023; consequently, we could not exclude recall bias. Lastly, the extracts were audio-checked rather than having them fully transcribed, and transcriptions were not back-translated; however, this potential source of translation bias was mitigated through member checking which helped confirm the accuracy and intended meaning of the transcriptions.

Conclusions

During the pandemic, the role and competence of nurse leaders became more visible. Despite limited reliable knowledge, they took difficult decisions to ensure the safety of patients, students, and healthcare professionals, often facing psychological distress and ethical dilemmas. The position of nurse leaders in healthcare organisations should be recognised and strengthened through active involvement in all stages of decision-making. Our multi-country accounts demonstrate that nurse leaders drew upon and developed competencies relevant to policy decision-making throughout the pandemic. These findings support arguments for more formalized nursing roles in policy processes and for investment in leadership development and preparedness structures.

Implications for nursing and health policy preparedness, response, and recovery

The competence shown by nurse leaders in the management of the pandemic, despite their lack of previous such experience, highlighted the urgent need for healthcare systems to work on the preparedness for future health crises, through

dedicated task-forces, which must include the nursing profession, accounting for cost of nursing actions that result from managerial or strategic decisions [59]. Furthermore, the adept management of the pandemic by nurse leaders showcased their indispensable contribution to navigating complex scenarios. This implies a clear call for strengthening the position of nurse leaders in decision-making processes. Investing in educational and training programmes oriented to policy-making competences for postgraduate nurses and claiming a strategic inclusion and active involvement in the decision-making chain among healthcare organisations could, for instance, be effective strategies.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12912-026-04565-4>.

Supplementary Material 1

Supplementary Material 2

Supplementary Material 3

Acknowledgements

We would like to report the names of the individual members of the Envision Consortium to make them searchable through their individual PubMed records. Envision Consortium: Beatrice Albanesi; Elena Casabona; Federica Riva-Rovedda; Mia Ingerslev Loft; Claus Sixtus Jensen; Riitta Suhonen; Gabriele Meyer; Nikoletta Karavani; Andreia Costa; Majda Pajnikihar; Gregor Romih; Paula Alite Cerezuela; M.Flores Vizcaya-Moreno; Christina Bökberg; Gabriela Hofstetter-Hefti; Samuel Cooke.

Author contributions

Study design: MC, AC, Data collection: MC, AC, CB, AB, NB, AH, CH, RK, MK, CL, RS, VSV, DV, JW, AZ, and ENVISION Consortium. Data analysis: MC, AC. Study supervision: MC. Manuscript writing: MC, AC, RK. Critical revisions for important intellectual content: MC, AC, CB, AB, NB, AH, CH, RK, MK, CL, RS, VSV, DV, JW, AZ.

Funding

This study was funded by the European Academy of Nursing Science (grant CLAM_RIC_N_COMP_21_01).

Data availability

The data that support the findings of this study are not openly available due to reasons of sensitivity and are available from the corresponding author upon reasonable request. De-identified materials may be shared under data-use agreement for legitimate requests. Data are located in controlled access data storage at University of Torino.

Declarations

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. Ethical approval to conduct the study was obtained from the Ethical Committee of the University of Torino (n. 0202731). Based on local ethical policies, each gatekeeper of each country requested and obtained approval in local ethical boards. After receiving the study information, all participants provided informed consent prior to the commencement of the study.

Consent for publication

Participants provided informed consent to be included in the study, and explicit consent for the publication of pseudonymized data was obtained.

Competing interests

The authors declare no competing interests.

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Received: 7 August 2025 / Accepted: 16 March 2026

Published online: 20 March 2026

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