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EMPIRICAL RESEARCH QUALITATIVE

Exploring the barriers, facilitators and needs to use patient outcomes in district nursing care: A multi-method qualitative study

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Abstract

Aim and Objectives: To provide an in-depth insight into the barriers, facilitators and needs of district nurses and nurse assistants on using patient outcomes in district nursing care.

Background: As healthcare demands grow, particularly in district nursing, there is a significant need to understand how to systematically measure and improve patient outcomes in this setting. Further investigation is needed to identify the barriers and facilitators for effective implementation.

Design: A multi-method qualitative study.

Methods: Open-ended questions of a survey study ($N = 132$) were supplemented with in-depth online focus group interviews involving district nurses and nurse assistants ($N = 26$) in the Netherlands. Data were analysed using thematic analysis.

Results: Different barriers, facilitators and needs were identified and compiled into 16 preconditions for using outcomes in district nursing care. These preconditions were summarised into six overarching themes: follow the steps of a learning healthcare system; provide patient-centred care; promote the professional's autonomy, attitude, knowledge and skills; enhance shared responsibility and collaborations within and outside organisational boundaries; prioritise and invest in the use of outcomes; and boost the unity and appreciation for district nursing care.

Conclusions: The preconditions identified in this study are crucial for nurses, care providers, policymakers and payers in implementing the use of patient outcomes in district nursing practice. Further exploration of appropriate strategies is necessary for a successful implementation.

Relevance to clinical practice: This study represents a significant step towards implementing the use of patient outcomes in district nursing care. While most research has focused on hospitals and general practitioner settings, this study focuses on the

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needs for district nursing care. By identifying 16 key preconditions across themes such as patient-centred care, professional autonomy and unity, the findings offer valuable guidance for integrating a learning healthcare system that prioritises the measurement and continuous improvement of patient outcomes in district nursing.

Reporting Method: Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines.

Patient of Public Contribution: No patient or public contribution.

KEYWORDS
community health nursing, home care services, learning health system, patient-reported outcome measures, qualitative research, value-based health care

1 | INTRODUCTION

Worldwide, substantial societal challenges are faced as the population ages, chronic diseases and care complexity increase, and the shortage of healthcare professionals grow. Because of these challenges, health systems are pressured to provide high-quality care that is safe, effective and responsive to patient needs (OECD, 2022). However, significant gaps in knowledge hinder a comprehensive understanding and enhancement of care delivery in general (Berwick et al., 2017) and at home (Jarrín et al., 2019). Better information on the value and outcomes of care is needed (Berwick et al., 2017), especially in district nursing care with its rising demands (Jarrín et al., 2019; MacLean et al., 2014). In this context, health outcomes, such as acceptable pain levels, increased autonomy, or reduction in unnecessary emergency room visits (Veldhuizen et al., 2021), will provide valuable insight into the effectiveness of district nursing practices. Systematically measuring and subsequently learning from outcomes and other data, corresponding to the steps of a learning healthcare system, is vital to improving healthcare practice. For Dutch district nursing care, systematically measuring and continuously improving outcomes is insufficiently done at the moment of this writing (Veldhuizen et al., 2022). It is currently unclear what is needed in district nursing care to support nurses in using outcomes. Further exploration of the influencing barriers, facilitators, and needs to use outcomes in district nursing care is crucial. This ongoing research enhances the future adoption and implementation of measuring and continuously improving outcomes in district nursing care.

What does this paper contribute to the wider global community?

- The paper offers valuable guidance for implementing a learning healthcare system that focuses on the systematic measurement and learning from patient outcomes in district nursing care, impacting the global clinical community.
- This paper strengthens the evidence base for district nursing care worldwide, helping to improve its practice and enhancing the development of policies informed by evidence.

2 | BACKGROUND

2.1 | Measuring and improving outcomes as part of value-based healthcare

Measuring and continuously improving outcomes in district nursing care in the Netherlands is held back by the main focus of organisations on the hours of delivered care (volume) instead of the outcomes of care (value). In most Western countries, including the Netherlands, the most common healthcare payment system is fee-for-service. This payment system rewards volume instead of value (Miller, 2009). To shift the focus of healthcare organisations from volume to value, value-based healthcare is currently receiving more attention worldwide (Larsson et al., 2022). In value-based healthcare, the objective is to continuously improve delivered health outcomes to patients for the money spent (Larsson et al., 2022). By measuring, tracking and improving health outcomes systematically, health systems pursue to (1) deliver better patient outcomes and overall population health more consistently, (2) identify and disseminate best practices, (3) control the total healthcare costs more effectively, and (4) rebuild the trust and motivation of health professionals (Larsson et al., 2022). Larsson et al. state that value-based healthcare is relevant for patients, care providers, and payers, such as the government, health insurers, and municipalities. Our study primarily focuses on nursing professionals' experiences and needs in systematically measuring and learning from patient outcomes to improve district nursing care (described in this paper as "using outcomes").

2.2 | A learning healthcare system to improve outcomes

Measuring and learning from outcomes are in accordance with a Learning Healthcare System. The idea of a learning healthcare

system was initially proposed by the Institute of Medicine (2007) and then further developed by various other organisations (Friedman et al., 2017). The essence of the learning healthcare system concept lies in the importance of information continuously improving health outcomes through iterative 'learning cycles' (Friedman et al., 2017). A learning healthcare system does not primarily look at outcomes but focuses on collecting all available information or data to generate knowledge (Friedman et al., 2017). It follows a three-step cycle: collect data from practice (i.e. Practice to Data), generate knowledge from the data via analyses and interpretation of data (i.e. Data to Knowledge), and transfer knowledge back into practice (i.e. Knowledge to Practice) (Foley et al., 2021). This cycle aligns with the stepwise nursing process (i.e. assessment, diagnosis, planning, outcome setting, intervention implementation, and care evaluation (Toney-Butler & Thayer, 2022)), making it suitable for district nursing practices.

2.3 | Implementing a learning healthcare system with a focus on patient outcomes in district nursing care

To achieve a patient-centred focus on using health outcomes, it is important to include patient-reported outcome measures and patient-reported experience measures (Berwick et al., 2017). In Dutch district nursing care, patient outcomes are part of the daily nursing clinical reasoning process (Toney-Butler & Thayer, 2022). They are often reported in the care reports or care plans in the electronic care records using the Nursing Outcome Classification (NOC) (Moorhead et al., 2018) or the problem rating scale on knowledge, behaviour, and status within the Omaha system (Martin, 2005). Some of the most often measured outcomes are pain using the Numeric Rating Scale or Visual Analogue Scale, delirium using the Delirium Observation Scale, and caregiver burden using the Caregiver Strain Index or a Dutch equivalent (Veldhuizen et al., 2022). However, most outcomes are not systematically and standardised measured and recorded in general or with the use of NOC or the Omaha system (Veldhuizen et al., 2022; Zuizewind & Versteeg, 2022). Additionally, the current usage in Dutch district nursing care often remains limited to the individual patient level, leaving the application of patient outcomes for learning and improvement at an early stage (Bleijenberg et al., 2019; Stuurgroep Kwaliteitskader Wijkverpleging, 2018). Previous research showed what outcomes are relevant for and influenceable by district nursing care (e.g. quality of dying and death or informal caregiver burden) (Veldhuizen et al., 2021). Another study on how patient outcomes are currently used in district nursing practice showed that nurses have a positive attitude towards using outcomes for learning and improving. However, there is a lack of facilitation to support nurses (Veldhuizen et al., 2022). Due to the nature of previously conducted studies, it is currently insufficiently known how district nurses can be supported to use patient outcomes to improve their daily practice. Measuring and learning from outcomes can be seen as a new way of working that requires solid implementation. Before implementation, it is recommended to study the context, including the barriers and facilitators (Nilsen & Bernhardsson, 2019). However, there is a lack of insight into the barriers and facilitators for district nursing care, as the literature on value-based healthcare, learning healthcare systems, and patient-reported outcome measures often focuses on the hospital setting or the general practitioner in primary care instead of district nursing care (Foster et al., 2018; van Engen et al., 2022). Additionally, because district nursing care has a specific organisation and financing, this study focuses on Dutch district nursing care to better understand the context and enhance future implementation.

3 | THE STUDY

This study aimed to provide an in-depth insight into the barriers, facilitators, and needs of (district) nurses and nurse assistants in using patient outcomes in district nursing care. These insights are of great value for informing care providers, policymakers, and payers to organise the needed preconditions to enhance the future adoption and implementation of a learning healthcare system in which patient outcomes are used to improve district nursing care.

4 | METHODS

4.1 | Design

A multi-method qualitative approach was used. This design involves applying two distinct research methods within a single project (Morse, 2003). The approach consisted of sequentially using two qualitative data collection methods: initially, qualitative data were collected through open-ended questions in a survey, followed by in-depth online focus group interviews involving district nurses and nurse assistants in district nursing care in the Netherlands. The focus group interviews assumed a dominant role in the second phase (qual → QUAL).

4.2 | Study setting

This study focused on district nursing care in the Netherlands, in which district nursing care is defined as all medical, technical, rehabilitative and supportive nursing care interventions or assistance with personal care for (older) people living at home (Van Eenoo et al., 2016). In the Netherlands, district nurses, vocational nurses, nurse assistants and basic care assistants deliver district nursing care. The latest available figures from 2018 indicate that 12,400 district nurses (bachelor prepared registered nurse, European Qualification Framework (EQF) level 5 and 6) worked in district nursing care, together with 16,108 vocationally trained nurses (EQF level

4), 41,799 nurse assistants (EQF level 3) and 4759 basic care assistants (EQF level 2). Together, they provided care to 585,200 people in the Netherlands in 2021 (Nederlandse Zorgautoriteit, 2022).

4.3 | Participants and recruitment

A nationwide survey study was conducted from July to October 2020 among district nurses in the Netherlands. Details about the method of this study have been published elsewhere (Veldhuizen et al., 2022). The survey was conducted to understand better how district nurses use nurse-sensitive patient outcomes to learn from and improve district nursing practice. The target population of the survey study comprised all nurses (EQF level 4–6) working in district nursing care. Convenience sampling was used to approach nurses. The survey was distributed nationwide via an online survey platform; it was openly available to all district nurses working for various organisations in the Netherlands. More information about the drop-out of participants is described elsewhere (Veldhuizen et al., 2022).

Subsequently, online focus group interviews were conducted from March to June 2021. These focus groups involved district nurses, vocational nurses, and nurse assistants (EQF level 3–6). The latter were additionally included as participants, as the survey study revealed that nurse assistants had a role in measuring outcomes in district nursing practice. For the focus groups, purposive sampling was used to recruit nurses and nurse assistants throughout the Netherlands. Nurses and nurse assistants were approached via the professional network of the researchers via e-mail, social media (LinkedIn and Twitter), and the Dutch Association of Nurses and Nurse Assistants. We aimed for maximum variation by selecting participants from multiple district nursing organisations across the Netherlands with various years of working experience, genders, and ages. In total, 32 people agreed to participate, of which six dropped out due to high workload ($n=4$); 2 participants provided no reason for non-participation.

To enhance readability, district nurses, vocational nurses and nurse assistants are described as "nurses" from this point onward unless otherwise specified.

4.4 | Data collection

The data collection comprised two sequential steps: data from a survey study was collected, followed by focus group interviews, with a primary emphasis on the latter (qual ➔ QUAL).

4.4.1 | Survey

The survey study followed a cross-sectional design in which data was collected online. The survey was specially developed to explore how nurse-sensitive patient outcomes are used in Dutch district nursing practice. The survey comprised open and closed questions with four parts: (1) background characteristics; (2) measuring nurse-sensitive patient outcomes in current practice; (3) learning from nurse-sensitive patient outcomes in current practice; (4) barriers and facilitators of using nurse-sensitive patient outcomes. A more detailed description of the survey's development and validation, the data collection and the results of the closed questions are described elsewhere (Veldhuizen et al., 2022). The following background characteristics were measured: sex, age, education, job title, total hours working in district nursing care per week, years of working experience in district nursing care, other job positions, and the geographical working area (i.e. province). The study included four open-ended questions about (potential) barriers and facilitators to measuring and learning from nurse-sensitive patient outcomes: two questions focused on measurement and two on learning from outcomes.

4.4.2 | Focus group interviews

A first analysis of the open-ended questions of the survey resulted in numerous barriers and facilitators on how to use outcomes in their practice (e.g. measuring outcomes, analysing outcomes, interpreting outcomes, carrying out interventions, as well as the involved levels around the use of outcomes, such as the individual level, team level, organisational level and national level (Data S1 and S2)). Because these results were sometimes unclear (i.e. imprecise or ambiguous answers), additional online focus groups were conducted to provide a more in-depth understanding of the barriers, facilitators and needs. The identified barriers and facilitators from the survey were checked in the focus groups for recognisability and completeness. In the focus group, more emphasis was placed on what is needed in district nursing practice to overcome the barriers and promote the identified facilitators.

After verbal consent to participate, the study participants received a digital questionnaire 2 weeks before the interview to provide written consent for participation and to answer questions about their background characteristics (sex, age, education, job title, total hours working in district nursing care per week, years of working experience in district nursing care, other job positions, and the geographical working area). Each focus group started with an introduction of the researchers and participants and an explanation of the study. An interview guide based on the first findings of the survey study was used to structure the interviews (Data S3). Directly after the first interview, the researchers (FvW, JDV) discussed whether the guide guided the interview sufficiently. No changes were made regarding the interview guide. During the interview, participants were encouraged to interact with each other and invited to reflect on their perceived barriers and facilitators. Due to COVID-19 measures, the focus groups were conducted online via Microsoft Teams. Participants were either at their homes or workplaces. During the interview, which lasted 90 minutes, participants could use the "raise your hand" function or chat in Teams to respond to each other. Field notes were written down throughout the interview, and the audio was recorded via a digital voice recorder.

Transcripts were not returned to participants for comments or corrections to maintain the integrity and objectivity of the study's data analysis process.

Directly after each focus group, two researchers discussed the findings to check if the participants mentioned new information. Three focus groups were expected to be sufficient to reach data saturation, as the focus groups were additional to the survey. This expectation was met as the last focus group interview did not identify any new topics.

4.5 | Data analysis

Thematic analysis by Braun and Clarke (2012) was used to analyse both the survey's open-ended questions and the focus group interviews. The thematic analysis is conducted within a contextualist theoretical framework, which sits between the two poles of essentialism and constructivism. It acknowledges how individuals make meaning of their experiences whilst recognising how broader social contexts influence those meanings (Braun & Clarke, 2006). The thematic analysis conducted in this study comprehended six iterative phases: (1) familiarise with the data; (2) generate initial codes; (3) search for themes; (4) review themes; (5) define and name themes; (6) produce the report (Braun & Clarke, 2012). The first five phases were completed twice as the data of the survey study was analysed before the focus group interview data was analysed.

First, the data of the open-ended questions of the survey study was uploaded to ATLAS.ti 22 and was fully read (phase 1). Subsequently, codes were generated by one researcher and checked by a second researcher (phase 2). Then, one researcher searched, reviewed, defined, and named themes and discussed them with the research team (phases 3–5). The distribution of the identified barriers and facilitators across the identified themes of the survey data can be found in Data S1. Based on analysing the survey data (Data S2), these first descriptions of the themes were used to develop the interview guide for the focus group interviews (Data S3). Next, after conducting the focus group interviews, the responses were transcribed verbatim and uploaded in ATLAS.ti 22. Both researchers read and reread the transcriptions in this first phase. In the second phase, codes were generated; two researchers coded the focus groups separately. These codes were compared, discussed, and revised to test the consistency in coding between both researchers. The codes based on the survey study data were revised if needed. In the third phase, themes were searched in both the survey study and focus group data by forming code groups and placing these groups within themes. In phase four, themes were reviewed after a discussion between the researchers and other research team members (JDV, FvW, NB, MJS). The data analysis was conducted through an iterative and stepwise process. Researchers moved between datasets (survey data and focus group interview data), and the developed codes and subthemes were constantly compared during this analysis. Codes were recoded and reviewed, and subthemes were refined before defining and naming the final overarching themes (phase 5). The study was reported (phase 6) according to the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007) (Data S4).

A hybrid approach of inductive and deductive analysis was applied by placing a part of the results in an existing framework: inductive as codes and themes were derived from the data based on the participants' experiences; deductive as a framework was used to work out a part of the identified themes and to render issues that participants did not explicitly express (Braun & Clarke, 2012). In the third, fourth and fifth phases, the learning healthcare system as described by Foley et al. (2021) was partly used as an existing framework; only the results related to the three steps of a learning healthcare system were placed under their main headings: practice to data; data to knowledge; knowledge to practice. The results that diverged from these steps and addressed broader or overarching issues were delineated as distinct themes. The participants did not provide feedback on the findings as there was a significant amount of time between the focus group interviews and the final results being determined.

This study aimed to provide an in-depth insight into the barriers, facilitators, and needs of (district) nurses and nurse assistants in using patient outcomes in district nursing care. An attempt was made to categorise the identified results as barriers, facilitators, or needs. However, during the analysis and reporting of the results, it became apparent that this was not feasible; various factors were mentioned as barriers, facilitators, and needs. Therefore, the decision was made to translate them into preconditions for using outcomes. In the phrasing of the results, efforts were made to indicate whether a factor was described as a barrier, facilitator, or need whenever possible with words such as “barriers”, “hinders”, “enables”, or “helpful”.

The descriptive statistics of the participants' demographics were calculated in R version 4.1.3.

4.6 | Rigour and reflexivity

The concept of trustworthiness can be divided into credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985; Nowell et al., 2017). Due to COVID measures, focus group discussions shifted to a virtual setting, potentially impacting the study's credibility as participant engagement differs (Matthews et al., 2018). Researchers actively encouraged open dialogue to maintain credibility by ensuring all responses were welcomed. The “raise your hand” button was used to give everyone the opportunity to speak, as recommended by the literature (Willemsen et al., 2023). Non-verbal cues were monitored via MS Teams' camera function, and active engagement was encouraged, with opportunities for responses in the chat. Document triangulation (survey + focus groups) and researcher triangulation were used throughout the analysis to enhance the credibility of our study further. Also, a discussion of the identified themes of the survey study and the focus group interview

themes by the team of authors improved the credibility. Lastly, the identified themes were debriefed with peers not involved in the study. The transferability was enhanced by providing insight into the setting (in the method section) and the characteristics of the participants (in the result section). Because the focus group interviews were online, recruiting participants from all provinces in the Netherlands was possible. To strengthen the dependability, ATLAS.ti was used to document all steps of thematic analysis. Data S1 and S2 provide an overview of the results of the survey and focus group analysis. Additionally, reporting guidelines were followed to provide transparent reporting. To increase confirmability, verbatim statements made by the participants were included in the results. Also, reflexivity is a technique to establish confirmability (Lincoln & Guba, 1985). Therefore, after each focus group, both researchers reflected on the discussion and if changes needed to be made regarding the online setting and interview guide. No substantial changes were implemented. More information about the interviewer's training, experience and participant relationship is described in Data S5.

4.7 | Ethical considerations

Ethical approval for this study was granted by the Ethical Committee Research of the University of Applied Sciences Utrecht. They classified this research as not subject to the Dutch Medical Research Involving Human Subjects Act and permitted it to proceed (reference number 133–000-2020).

Participation in this qualitative study was voluntary. In the survey study, nurses were informed about the study's reasons, goals, and content in its introduction. Consent to participate in this study was administered by letting participants tick a corresponding box in the survey. In the focus groups, the participants received a digital questionnaire 2 weeks before the interview to provide information about the study and administer written consent for participation. During the interview, verbal consent was additionally asked. All data were stored and analysed per the General Data Protection Regulation (GDPR). Any personal details were removed from the survey data to ensure the anonymity of the data.

5 | FINDINGS

5.1 | Participant characteristics

In total, 132 nurses finished the survey; these nurses were mainly female (92.4%) and worked as district nurses (59.8%) (Table 1). Three focus groups were held with 3, 11, and 12 participants, each lasting approximately 2 h. Focus groups mainly consisted of female participants (96%) and district nurses (58%). The background characteristics concerning the sex and age of the participating nurses were similar to the available population characteristics (Grijpstra et al., 2020).

TABLE 1 Participant characteristics of the survey and focus group interviews.

	Survey (*N* = 132)	Focus groups (*N* = 26)
Gender, *n* (%)		
Female	122 (92.4)	25 (96)
Male	8 (6.1)	1 (4)
Other	1 (0.8)	0 (0)
Missing	1 (0.8)	–
Age, median (IQR)	50 (35–58)	39 (30–53)
Years of experience working in district nursing care, median (IQR)	10 (6–20)	7 (5–12)
Contract size (in hours per week) working in district nursing care, median (IQR)	25 (20–32)	29 (25–32)
Job title in district nursing care, n (%)		
Nurse assistant (EQF 3)	–	4 (15)
Nurse (EQF 4)	27 (20.5)	2 (8)
District nurse (EQF 5 & 6)	79 (59.8)	15 (58)
Specialised Nurse (EQF 7)	6 (4.5)	3 (12)
Other (nursing student, teacher)	19 (14.4)	2 (8)
Missing	1 (0.8)	–
The number of provinces represented	12/12	10/12

Abbreviations: EQF, European Qualification Framework; IQR, interquartile range.

5.2 | Identified themes

The identified barriers, facilitators and needs were compiled into 16 preconditions to use outcomes in district nursing care (Table 2), which were subsequently summarised into six overarching themes: (1) follow the steps of a learning healthcare system; (2) provide patient-centred care; (3) empower nurses to strengthen their professional autonomy, attitude, knowledge and skills; (4) enhance shared responsibilities and collaborations within and across organisational boundaries; (5) prioritise and invest in the use of outcomes on the organisational level; and (6) boost the unity and appreciation for district nursing care on the national level.

5.3 | Follow the steps of a learning healthcare system

The subthemes described under this theme are preconditions that are essential to be able to follow the steps of a learning healthcare system. To ease the translation of "practice to data", it is necessary to clearly define and operationalise patient outcomes for district nursing care, simplify the measurement of outcomes and acknowledge relevant registrations as a part of good care instead of an

TABLE 2 An overview of the themes and preconditions as subthemes to use outcomes in district nursing care, complemented with illustrative quotes.

Themes	Preconditions as subthemes	Illustrative quote
Follow the steps of a learning healthcare system	Clearly define and operationalise patient outcomes for district nursing care	Definition: "*I think it should also be clear what is meant by working with outcomes. This may seem abstract, but I think working with outcomes is part of the nursing care process*" *District nurse 18, focus group 3 (chat)* Operationalisation: "*I think that nationally is simply not feasible because there are such huge differences between patients in Rotterdam or the heart of Zeeland. Those are such different people who often have vastly different outcomes". District nurse 20, focus group 3*
	Simplify the measurement of outcomes	"*Ease of use (it should not be much), a clear and easy overview of where and for what purpose you can use the measurement instruments and what the added value is.*" *District nurse, survey*
	Acknowledge relevant registrations as a part of good care instead of an administrative burden	"*I don't really see why you would lose more time if you're working with outcomes? Maybe it works the other way around, that you waste even less time.*" *District nurse 13, focus group 3* "*If you have the right one, then it's not a burden but a pleasure.*" *District nurse 2, focus group 2*
	Promote the analysis and interpretation of outcomes	Analysing outcomes: "*Clinical reasoning is giving meaning to observations. I think that's exactly what you're doing here: How do you give meaning to those numbers? […] only we can give that meaning. It's never just about those numbers, but about the meaning behind it, that story behind it, and we have to tell that.*" *District nurse 2, focus group 2* Visualisation and interpretation: "*Provide an easy, unambiguous way of displaying results and link these with tools on how to work with them.*" *District nurse, survey*
	Make it easy to carry out interventions	"*Also, there should be one place for guidelines, research, measurement instruments*, etc. *for district nursing. So that knowledge is bundled and ultimately becomes expertise.*" *District nurse; quality nurse, survey*
	Provide a supporting information system	"*I believe that the system should indeed be facilitating and supportive. And I think it will make it easier to work with [outcomes]" District nurse 21, focus group 3*
Provide patient-centred care	Focus on the patient as the centre of nursing care	"*If outcomes also outweigh the patient's well-being, then we must ask ourselves whether this is the right path to take. That would be a challenge for me.*" District nurse 5, focus group 2
Empower nurses to strengthen their professional autonomy, attitude, knowledge, and skills	Maintain the nurses' professional autonomy to deviate from the norm	"*People who go from a 2 to a 3 can also be quite a step forward in quality for that person. Then it is not*: "*you didn't get to a 5, so it was a failure*". *So you shouldn't get hung up on those numbers. It's purely about the story behind it; from a 2 to a 3 can also be a story of success" District nurse 10, focus group 2*
	Adopt a positive attitude and increase motivation towards using outcomes	Positive attitude: "*You want to have those outcomes. You want to evaluate them, you want to be able to monitor them. That's what it's all about, those results. That's what makes you proud. That's the value of you as a district nurse" District nurse 2, focus group 2* Negative attitude: "*Outcomes are not important! It is about providing warm care, tailored to the person's personal needs. [It is important to] provide more attention to clients instead of measuring everything.*" *Nurse, survey* Increase motivation by sharing the added value of using outcomes: "*I think if that goes for, well, most nurse-assistants: if you understand why you're doing it, you're much more motivated.*" *Nurse assistant 1, focus group 1* "*I think that also very much depends on how people are informed and whether they, therefore, have the will to and see the added value [to use outcomes].*" *District nurse 21, focus group 3*
	Increase the knowledge and skills of team members	"*Isn't it also that there is a great unfamiliarity concerning outcomes? Also, among nurses?" District nurse 12, focus group 2 (chat)*

(Continues)

TABLE 2 (Continued)

Themes	Preconditions as subthemes	Illustrative quote
Enhance shared responsibilities and collaborations within and across organisational boundaries	Enhance shared responsibility and professional leadership within the team	Shared responsibility: "*The nurse assistants are sometimes quite afraid to take responsibility. [...] There is still quite a lot of checking in with the district nurse, like: "is this really okay"?" District nurse 1, focus group 1* Professional leadership: "*My experience is that, as soon as you try to remove the hierarchy as much as possible, and yes, it is a cliché, you try to empower people, especially nurse assistants, and encourage autonomy and thus also leadership, that people then automatically prioritise those outcomes." District nurse 13, focus group 3*
	Enhance organisational, regional, and national collaborations	"*I also strongly believe in looking beyond the boundaries of your organisation. So indeed, with different organisations, we also look at: what problems are there, which interventions do we carry out and what works" District nurse 15, focus group 3*
Prioritise and invest in the use of outcomes on organisational level	Prioritise necessary care to manage the lack of time and high work pressure	*District nurse 2: "so we'll keep this situation going if we just keep doing what we always do. It's time to set priorities and make the profession attractive again".* *District nurse 11: We will certainly keep it going if we continue in this way district nurse 2, but a staff shortage and the actual patient care will still come "first". "Even though we are busy scaling down [the care that we deliver] and looking at goals, then always registering everything, I must be honest, sometimes really falls short." District nurse 2 & district nurse 11, focus group 2 (chat)*
	Focus less on (financial) productivity and invest more in using outcomes of care	Productivity: "*You don't want to put too much [time] into it because then you get comments from above like: your productivity is going down". District nurse 1, focus group 1* Trust: "*Our dream is, of course, simply that you measure yourself what you want to measure and will do with the results, but the reality is that health insurers and the government also have wishes. And that is very difficult." District nurse 9, focus group 2* Support: "*If managers and policy officials do not support it, it is often difficult to motivate district nursing professionals to have outcomes measured" District nurse; project manager, survey*
Boost the unity and appreciation for district nursing care on the national level.	Achieve more unity in the district nursing profession	"*You should, in any case, start with one vision that everyone has, that the health insurers support, the organisations support, the inspectors support [...]. That everyone knows: this is it, we are going to work with this, and this is what we want with it." District nurse 1, focus group 1*
	Boost the appreciation for district nursing care	"*The moment we are valued much more in that society for what we are really worth, our own appreciation will also increase. So, as far as I'm concerned, there is also an enormous role for the government, for health insurance, for the professional association, whoever can influence this. How we as a society look at district nursing as a whole." District nurse 2, focus group 2*

administrative burden. To ease the translation of "data to knowledge", it is needed to promote the analysis and interpretation of outcomes. To ease the translation of "knowledge to practice", it is needed to make it easy to carry out interventions. A supporting information system is necessary for all steps of a learning healthcare system.

5.3.1 | Clearly define and operationalise patient outcomes for district nursing care

An important barrier to using outcomes is the lack of definition and operationalisation of patient outcomes for district nursing care. "Outcomes" is a broad concept that participating nurses interpret in different ways: as a result of delivered care at the patient level, as a quality indicator on a national level, or a combination of both. Some nurses mention that this lack of definition and operationalisation hinders them from using outcomes and following the steps of a learning healthcare system. In deciding what outcomes should be measured, participating nurses find that outcomes should be relevant for the patient, sensical for district nursing care and able to be influenced by district nurses. Another barrier to using outcomes in district nursing care is the different viewpoints of the participating nurses about the level at which outcomes should be measured. Some nurses find focusing on nationwide outcomes challenging due to regional differences in Dutch inhabitants, whilst others advocate for streamlined use of outcomes nationwide. Other nurses expressed that outcome measurements should differ per intended purpose on different levels (i.e. patient, team, organisational, regional or national level) or for different specialistic care groups (e.g. palliative care, dementia).

5.3.2 | Simplify the measurement of outcomes

In measuring patient outcomes, the availability and accessibility of (validated) questionnaires were raised as an essential issue that enables the measurement of outcomes. According to the nurses, questionnaires should be combined or bundled in one place, preferably in the electronic health record. Questionnaires should be user-friendly to administer and register in the electronic health record. Additionally, it facilitates nurses if questionnaires are short, simple, and unambiguous in use. Barriers to measuring outcomes are the unawareness of and unfamiliarity with questionnaires or having too many questionnaires available. Some nurses experience that care delivery is hindered by too much focus on obligatory questionnaires and checklists to measure outcomes, increasing the administrative burden. Additionally, the nurses point out that an accurate registration and interpretation of the data is challenging due to ambiguity and variation in current outcome measurements and definitions.

5.3.3 | Acknowledge relevant registrations as a part of good care instead of an administrative burden

The administrative burden within the district nursing organisations is experienced as high, and some nurses fear that measuring outcomes will further increase this burden. However, other nurses state that it is not an administrative burden if relevant outcomes that are part of the daily nursing process are used. It was mentioned that good care requires good registration. According to the nurses, the experienced administrative burden could be decreased by supporting information systems and using already available nursing documentation and other data in the electronic health record.

5.3.4 | Promote the analysis and interpretation of outcomes

A facilitator of analysing outcomes is to have the analysis preferably carried out by someone with affinity and experience regarding outcomes and data analysis. Help with the analysis from someone from the organisation (e.g., IT specialist) would be advantageous. However, nurses feel the analysis should never be done solely by an IT specialist. An essential enabling factor is to leave the interpretation of the measured outcomes to the nursing teams. Additionally, it would be valuable to have someone from the organisation (e.g., quality officer) look at the bigger picture on an organisational, regional, or national level.

The nurses emphasised that the visualisation of data is crucial for interpreting outcomes. The current lack of insight into measured outcomes is experienced as challenging. The nurses mentioned different forms of data visualisation to be helpful, such as using graphics, tables, and pictures. Hindering factors were too much or complicated information or only using text to share the results of the measured outcomes. Regularly discussing the outcomes within team meetings was described as a facilitating factor in interpreting the outcomes.

5.3.5 | Make it easy to carry out interventions

It is a facilitating factor when nurses feel free to choose what interventions should be carried out. However, some nurses experience insufficient information on what to do in the event of a finding. Other facilitating factors are an overview of what interventions could be carried out per outcome, the availability of national guidelines, care pathways, and other relevant evidence-based knowledge.

5.3.6 | Provide a supporting information system

Nurses indicate that a supporting information system is essential to follow the steps of a learning healthcare system. It is helpful if the system facilitates or supports the analysis and display of the data, favourably automatically and within the electronic health record, in the form of a dashboard. Currently, the extent to which the system is supportive varies between organisations.

5.4 | Provide patient-centred care

5.4.1 | Focus on the patient as the centre of nursing care

The nurses stated that using outcomes in practice should first and foremost be focused on the patient's health and well-being. It should serve nurses to provide holistic, patient-centred care. Some nurses worry that too much focus on only measuring outcomes could lead to a technical, business-focused, and impersonal relationship with the patient, potentially missing important information that cannot be measured with questionnaires. However, others see outcomes as essential to their daily nursing clinical reasoning process.

5.5 | Empower nurses to strengthen their professional autonomy, attitude, knowledge and skills

5.5.1 | Maintain the nurses' professional autonomy to deviate from the norm

The nurses want to maintain their professional autonomy to decide whether measuring outcomes and carrying out interventions have added value for the particular patient. They feel there should be room to deviate from the norm and tailor the outcome measurements and interventions to the specific patient situation, making choices based on their knowledge and skills aligned with the patient's needs.

5.5.2 | Adopt a positive attitude and increase motivation towards using outcomes

The attitudes towards the use of outcomes among participants vary. The nurses participating in the focus group interviews mainly had a positive attitude towards patient outcomes and were motivated to use them in their work. The nurses explained that outcomes contribute to delivering good care as they create awareness and insight into the effectiveness of care delivery. Nurses stated they could use the outcomes to substantiate their actions and show their worth. They see patient outcomes as an essential part of the nursing process they apply in their daily work and are confident that outcomes can be used to learn from and improve their practice. Other nurses are motivated to use outcomes but feel insufficiently supported by other team members. They find it challenging to get the whole team involved in using outcomes in district nursing practice; other team members have a negative attitude and are not interested in or motivated to measure outcomes as they often do not see the necessity, benefits, and usefulness of doing so. Additionally, some nurses participating in the survey showed a negative attitude towards using outcomes in practice. These nurses indicated that, currently, enough outcomes are measured, and no further attention is needed to measure outcomes in district nursing care. Others are afraid that outcomes are measured solely for the sake of measuring them. Nurses express that measuring outcomes should not become a goal in itself.

To adopt a positive attitude and increase motivation, an often-mentioned helping factor is knowing the added value of using outcomes in daily practice on the organisational, regional and national levels. Explaining and showing the added value to team members in a clear, low-key, and easy way would be facilitating.

5.5.3 | Increase the knowledge and skills of team members

Nurses face insufficient knowledge and skills as a barrier to using outcomes. The difference in knowledge between nurses, nurse assistants and basic care assistants hinders the adoption of using outcomes. Teaching knowledge and skills through (online) training were raised as essential to enable the use of outcomes in district nursing practice. It would be favourable if the training were provided at all levels within and outside the teams (i.e. nursing students, nurse assistants, nurses, and managers).

5.6 | Enhance shared responsibilities and collaborations within and across organisational boundaries

5.6.1 | Enhance shared responsibility and professional leadership within the team

An often-mentioned facilitating factor is having a team member (district nurse, first-responsible nurse or nurse assistant) responsible for implementing the steps of a learning healthcare system to use patient outcomes. The nurses express the importance of collaborating and creating a shared responsibility within the team. However, within a team, some nurse assistants are afraid to take responsibility, are not actively involved in new developments, or do not think it is their job to work with outcomes. To improve the shared responsibility, nurses explain that it would be helpful to involve the whole nursing team and others from the organisation (e.g., manager, quality officer) early in the process. Nurse assistants feel the nurses could empower them more by providing more responsibilities to them.

The nurses underline the importance of showing professional leadership. They find it essential to stand up and take a pioneering role to convince and motivate their team members and their organisations, involved health insurers and other stakeholders concerning the relevance of using outcomes. However, participating nurses feel they have limited influence.

5.6.2 | Enhance organisational, regional, and national collaborations

Nurses and nurse assistants generally want to collaborate in using outcomes in district nursing care. It would be valuable for teams to work towards and adhere to unambiguous agreements regarding the use of outcomes. A helping factor is to work together as one team by focusing on the same goals. However, the nurses specify that basic care assistants often do not want to be involved in new developments regarding outcomes. To enhance the collaboration within the team, nurses share that basic care assistants, nurse assistants and nurses could be linked to each other to work together. On a regional level, some nurses commented that collaborating within and between district nursing organisations through peer consultation and interprofessional cooperation is valuable. An additional facilitating factor, according to the nurses, is sharing outcomes and other relevant data with other district nursing organisations, general practitioners, and hospitals to compare with and learn from.

5.7 | Prioritise and invest in the use of outcomes on organisational level

5.7.1 | Prioritise necessary care to manage the lack of time and high work pressure

A strong theme emerging from the data was the lack of time among nurses to use outcomes in their daily practice. In addition, nurses experience high work pressure caused by a high workload and a staff shortage as significant barriers. To address time constraints and high workload, some nurses emphasise the need to prioritise essential patient care tasks whilst acknowledging patient care as the top priority. Whilst they also highlight the importance of dedicating time to measure and learn from outcomes, this is not always feasible within their daily tasks.

5.7.2 | Focus less on (financial) productivity and invest more in using outcomes of care

Another important barrier is that nurses feel that finances are the top priority for district nursing organisations and health insurers, as they primarily look at the number of hours of patient care delivered per team (i.e. productivity). This excessive focus on productivity hinders nurses' ability to make time to use outcomes and adhere to the learning healthcare system approach. Also, a few nurses experience (anxiety about) being punished for mistakes or too low productivity by their organisation.

Good agreements between the district nursing organisation and health insurer are mentioned as a facilitating factor. Some nurses feel the health insurer's lack of support and trust limits them. They also worry that the influence of health insurers is greater than desired and are afraid they will bring additional requirements regarding outcome usage.

A lack of investment and interest in using outcomes by the district nursing organisation is experienced as a barrier. It would be helpful if organisations supported teams in using outcomes and the learning healthcare system approach. Some nurses experience a lack of openness in their organisation to discuss outcomes. Additionally, some nurses often experience insufficient time, space, and resources to use outcomes, whilst others are given enough space to use outcomes.

5.8 | Boost the unity and appreciation for district nursing care on the national level

5.8.1 | Achieve more unity in the district nursing profession on using outcomes

Nurses emphasise the importance of a unified vision and policy for outcome usage in district nursing care, backed by all stakeholders (teams, organisations, health insurers, inspectorate, government) whilst allowing flexibility to tailor specifics to team, organisational, or regional contexts. At the national level, insufficient unity within the district nursing profession is a constraining factor. The presence of diverse district nursing care organisations with varying outcome measurements underscores the nurses' desire for a better nationwide organisation of district nursing care.

5.8.2 | Boost the appreciation for district nursing care

Nurses sense a lack of recognition for the value that district nursing care brings, which contributes to their feeling of underappreciation at the national level. Some nurses expressed that outcomes contribute to substantiating the added value of their care delivery, subsequently increasing the appreciation for district nursing care. It would support nurses if the societal appreciation for district nursing on a national level increased. Enhanced national societal appreciation for district nursing would facilitate nurses; they see the government, health insurance companies, and the National Nursing Care Association as responsible.

6 | DISCUSSION

The study revealed barriers, facilitators and needs that influence the use of patient outcomes in district nursing care, as discussed by nurses and nurse assistants. The findings were translated into 16 preconditions to use outcomes in district nursing care, which can be summarised in six overarching themes: the steps of a learning healthcare system; patient-centred care; the nurses' professional autonomy, attitude, skills and knowledge; responsibilities and collaboration within and across organisational boundaries; prioritising and investing in the use of outcomes; and unity and appreciation for district nursing care on the national level.

The first theme focuses on integrating the steps of a learning healthcare system to improve practice. The importance of continuously improving healthcare practice using outcome data is underlined by literature on value-based healthcare (Larsson et al., 2022; van Engen et al., 2022), learning healthcare systems (Foley et al., 2021; Franklin et al., 2017), and patient-reported outcome measures (Foster et al., 2018). Our study identified multiple preconditions for measuring (e.g. clear definition, unambiguous operationalisation and simplified measurement), analysing (e.g. professional help with the analysis of the data), and interpreting outcomes (e.g. clear data visualisation), as well as carrying out interventions (e.g. national guidelines), which is described by other literature as well (Foster et al., 2018; van Engen et al., 2022). The literature underlines a supporting information system as an essential precondition, stating that inadequate data systems are bothersome and hinder the implementation of outcomes in practice (Foster et al., 2018; van Engen et al., 2022). A central concern for participating nurses was the administrative burden. Whilst some expressed that measuring outcomes as part of the nursing process does not enlarge the burden, as underlined by the literature (De Groot et al., 2022), they stressed the need to minimise administrative complexity and prioritise accurate registration.

The second theme describes the precondition to put the patient at the centre of nursing care and to focus on outcomes that matter to patients. Using outcomes that make sense for patients is also the main focal point of value-based healthcare (Larsson et al., 2022; van Engen et al., 2022), a core value in a learning healthcare system (Foley et al., 2021; Menear et al., 2019), and an essential factor influencing the implementation of the use of patient-reported outcome measures (Foster et al., 2018; Franklin et al., 2017). Outcomes must be flexible to adapt to the patient's particular setting, selecting outcomes based on the needs of patients (Foster et al., 2018).

The third theme describes the importance of strengthening the nurses' autonomy, attitude, knowledge, and skills. Despite their current perception of limited influence, the nurses in this study want to take leadership roles and preserve their professional autonomy, including the flexibility to deviate from norms. Other literature has also

identified the importance of taking a leadership role and deviating from professional standards (Foster et al., 2018; van Engen et al., 2022). Our study also identified both positive and negative attitudes towards the importance of using outcomes, similar to a systematic review of the professionals' roles and behaviour in pursuing value-based healthcare (van Engen et al., 2022). An explanation for the negative attitudes identified in our study is that nurses are afraid to measure meaningless outcomes and experience high administrative burdens and a lack of time. This aligns with the study by Foster et al. (2018), which describes the importance of measuring beneficial outcomes for patients and that a high workload and insufficient time hinder the implementation of outcome measures in healthcare. Regarding knowledge and skills, nurses are currently insufficiently trained to use outcomes in district nursing care (Veldhuizen et al., 2022). Other literature also revealed knowledge, skills and experience deficits among healthcare professionals (van Engen et al., 2022) and the importance of good training and clear guidance (Foster et al., 2018).

The fourth theme describes shared responsibilities and collaborations as preconditions. This can be established by involving all professionals early in the process and showing them the added value of using outcomes. Literature shows that involving healthcare professionals and patients early in the outcome process (i.e. bottom-up engagement) and discussing the value in practice facilitates the implementation process (Foster et al., 2018; van Engen et al., 2022). Additionally, it is necessary to intensify the collaborations within and outside the team on regional and national levels, which has also been pointed out by others, emphasising the importance of having a positive team culture (Foster et al., 2018), working in teams and collaborating (van Engen et al., 2022).

The fifth theme focuses on the urgency to prioritise the use of outcomes. The nurses desire more organisational commitment and investment, comparable to the professionals' needs described in the literature (Foster et al., 2018; van Engen et al., 2022). The nurses in our study experienced that organisations and health insurers focus too much on financial productivity instead of patient outcomes. This financial focus is likely due to the organisation and funding of Dutch district nursing care, which is funded on a fee-for-service basis, in which insurers pay for delivered care, leading to the incentive to provide care, regardless of its value for the patient (Miller, 2009).

The sixth theme describes the precondition to boost the appreciation for district nursing care and create national unity. This study underlines the importance of using outcomes to show the added value of and boost the appreciation for district nursing care, which aligns with other literature (Jarrín et al., 2019). Additionally, our study identified the wish for more unity in outcome measurements in district nursing care. Creating more unity in measurements is needed to (re)use routinely collected healthcare data to manage patient care, organisations, and medical and health service research (Verheij et al., 2018). However, there is a current lack of unity in measuring outcomes as a wide range of terminologies and categorisations are used in nursing practice (De Groot et al., 2019), and there is variation between health record systems and inconsistent recording using different coding and thesauruses in primary care (Verheij et al., 2018).

6.1 | Strengths and limitations of the work

To our knowledge, this is the first study providing an in-depth insight into preconditions to use patient outcomes as part of a learning healthcare system in district nursing care. Whilst this study focused on the Dutch context, the described preconditions are broad and, therefore, attractive to other countries. The multi-method design enhanced the study's trustworthiness. Conducting the focus groups after the survey made it possible to check the survey study results. We suppose that this had a positive effect on the transferability of the study. Next, whilst assumption bias may be a potential problem as the principal researcher conducted previous studies on this subject, attempts have been made to avoid this by analysing the data with someone unfamiliar with the subject and by checking every step with the whole research team.

To appreciate the findings of this study, some limitations need to be considered. Selection bias may be a potential problem in this study. The sample size of the survey study is relatively small, as also addressed in more detail in our previous study (Veldhuizen et al., 2022). Additionally, the focus group interview participants were not a reliable representation of those working in district nursing care. Whilst every effort has been made to compose a sample that reflects district nursing care, it has not succeeded, as the age of the participants is much lower, and the group of nurse assistants included in these interviews is smaller than the national average. This could influence the results of our study; it is possible that participants in the focus group interviews were more positive and more motivated regarding using outcomes in their daily work. The participants in the focus groups all had positive attitudes, whilst negative attitudes were identified in the survey study. This may affect the transferability of the study.

6.2 | Recommendations for further research

Translating the barriers, facilitators and needs into various preconditions is a first step towards the implementation of measuring and continuously improving outcomes in district nursing practice. Whilst our study addressed barriers and facilitators in district nursing care, there is a need for more in-depth exploration. Nilsen and Bernhardsson (2019) highlight that successful implementation requires a deep understanding of the context. Tailoring implementation strategies to the specific organisational context is essential, as settings, individuals, and contextual factors are highly heterogeneous (Powell et al., 2019). Currently, there is a limited specification of strategies for the implementation of patient-reported outcome measures (Stover et al., 2021), value-based healthcare (van Staalduinen et al., 2022), and a learning healthcare system (Budrionis & Bellika, 2016). It is of utmost importance to further study how outcomes and the steps of a learning healthcare system can be implemented in district nursing care and integrated with other sectors like primary care and hospital settings. In this, the 16 preconditions described in this study should be considered for an effective implementation on an organisational and national level. Next, this study did not detail the nurses' current knowledge. Therefore, further research is needed to identify the current knowledge and skills

and how to fill in the knowledge gaps, so nurses are prepared to work with outcomes and follow the steps of a learning healthcare system. Following this, developing education for nurses, nurse assistants, and nursing students requires further exploration.

6.3 | Implications for policy and practice

It is recommended to shift the focus from productivity based on hours of delivered care to patient outcomes. This requires a major transformation of the organisation and funding of healthcare, including potentially changing the payment model from a fee-for-service to one focusing on outcomes. In this transformation, it is recommended to take an evolutionary approach (Larsson et al., 2022). To take the first steps to integrate the use of outcomes in district nursing care, it is necessary to encourage payer-provider collaborations and to create space for nursing professionals to experiment with outcomes to learn and improve. Nurses need to be supported with opportunities, appreciation and resources by their organisations, policymakers, and payers.

7 | CONCLUSION

This qualitative multi-method study revealed various barriers, facilitators and needs, which were translated into preconditions on how district nursing care professionals should be supported to use patient outcomes to learn from and improve district nursing practice. The overview of preconditions can aid care providers, policymakers and payers in organising district nursing care, with as main requirements: integrate the steps of a learning healthcare system when implementing the use of outcomes; keep the patient at the centre of care; promote professional autonomy, positive attitudes, knowledge and skills of the nurses; enhance shared responsibilities and collaborations within and outside nursing teams; prioritise the importance of using of outcomes to promote the value of district nursing care; and boost the unity and appreciation for district nursing care on the national level. However, it is necessary to further explore and tailor implementation strategies for district nursing care. Providing nurses with the necessary resources is crucial for realising this evolutionary transformation, along with a collective commitment to shift the focus to patient outcomes at both organisational and national levels.

AUTHOR CONTRIBUTIONS

Jessica Desirée Veldhuizen: Conceptualization; methodology; formal analysis; investigation; data curation; validation; writing – original draft; writing – review and editing; project administration. **Frans Van Wijngaarden:** Methodology; formal analysis; investigation; data curation; writing – original draft; writing – review and editing. **Misja Chiljon Mikkers:** Conceptualization; methodology; supervision; writing – review and editing. **Marieke Joanne Schuurmans:** Conceptualization; methodology; supervision; writing – review and editing. **Nienke Bleijenberg:** Conceptualization; methodology; resources; supervision; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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