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Quality indicators in telephone nursing – An integrative review

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Abstract

Aim: The aim of this study was to identify factors that indicate quality in telephone nursing.

Design: An integrative literature review.

Method: A literature search was performed in October 2018, in the PubMed, CINAHL, Cochrane Library, Academic Search, PsycINFO, Scopus and Web of Science databases. A total of 30 included were included and data that corresponded to the study's aim were extracted and categorized along the three areas of quality as described by Donabedian (Milbank Quarterly, 83, 691), namely *structure*, *process* and *outcome*.

Results: The analysis revealed ten factors indicating quality in telephone nursing (TN): availability and simplicity of the service, sustainable working conditions, specialist education and TN experience, healthcare resources and organization, good communication, person-centredness, competence, correct and safe care, efficiency and satisfaction. TN services need to target all ten factors to ensure that the care given is of high quality and able to meet today's requirements for the service.

KEYWORDS

integrative review, nursing, telephone triage, quality, quality of care, telenursing, telephone nursing

1 | INTRODUCTION

The International Council of nurses has identified nursing as the largest provider of front-line health services in the world (ICN, 2020). Telephone nursing (TN) is the provision of nursing care over the telephone and involves the identification, assessment and management of patients' needs. This includes telephone triage, nurse advice and care management (Greenberg, 2009). TN is a rapidly growing platform for care and it is often the first instance for medical assistance and help and is an important tool for reducing unnecessary healthcare use and for optimizing the distribution of healthcare resources (Martinsson & Gustafsson, 2018). In Sweden, telephone nurses answer approximately 4.1 million calls per year through the country's largest healthcare provider, the national TN service Sweden Healthcare Direct (Inera, 2020) and similar TN services are found in many other countries. TN is a complex task where the nurse must be able to work independently and make decisions about referrals, level of care and provide self-care advice (Gustafsson et al., 2019). But for TN to be considered reliable and safe, systematic quality work in needed to constantly improve and develop the service.

2 | BACKGROUND

The quality of nursing services provided is central to patient safety and satisfaction, and the appropriate and efficient distribution of

organizational resources (ICN, 2020). The process of TN comprises gathering of information, cognitive processing of the information and ultimately producing an output in the form of actions that are designed to meet caller needs. Gathering information about the caller's condition and needs is essential to be able to perform an accurate assessment of the caller's condition and needs and to provide high-quality care that is safe and accurate (Greenberg, 2009). Communication is central when gathering information and providing advice and a critical element in patient safety (Ernesäter et al., 2012). TN implies communicating in a non-physical setting and the lack of visual information impedes examination and assessment (Röing & Holmström, 2015). Verbal interactions form the foundation of TN, and the lack of visual information such as body language, facial expressions and gestures complicates the communication (Eriksson et al., 2019). This requires that the nurses possess both extensive medical knowledge and caring competence to satisfactorily identify and meet patients' needs (Gustafsson et al., 2019). According to Wahlberg et al. (2003), the key to safe TN is accurate decision-making. According to ICN (2020), the fundamental quality of nursing is compassionate care, that is the capacity to decide with intelligence and compassion, despite uncertainty, on the base of ethical codes, theoretical knowledge and clinical experience and with the ability to anticipate consequences and the courage to act.

Deficits in quality in TN compromises patient safety and satisfaction and communication deficits are a common cause of medical errors and malpractice claims (Ernesäter et al., 2012). An observandum are patients that make repeated contacts to the Sweden Healthcare Direct (SHD). Closed-ended questions, talking to someone other than the patient and failure to listen to the patient have been identified as potential threats to patient safety (Ernesäter et al., 2010, 2012), while calm and clear communication has been described by patients as reassuring (Gustafsson et al., 2019).

The World Health Organization (WHO, 2006) defines quality of care as "the extent to which healthcare services provided to individuals and patient populations improve desired health outcomes. To achieve this, health care must be safe, effective, timely, efficient, equitable and people-centred." A broad definition of the term quality is the degree to which a set of built-in properties meets the requirements (ISO 9000:2005). Donabedian (2005) was a pioneer in health services research and has made valuable contributions in the efforts to conceptualize quality in care. According to Donabedian (2005), the concept of quality is reflected in *structure*, *process* and *outcome*. Structural indicators of quality reflect the settings where care takes place and the resources linked to the provision of care. This includes administrative and related resources that support and direct the provision of care. Process indicators reflect the provision of care, that is the content and activities of care. Outcome indicators illustrate outcomes of the care given, both for the patient and for the organization. Structural, process and outcome indicators all can be patient-reported, that is they can be evaluated on the basis of patients' experiences.

Deficits in quality in TN compromise patient safety and satisfaction and imply that healthcare resources are not used efficiently and equitably. Knowledge of the factors that indicate quality is essential to the ability of healthcare services to provide care that is knowledge-based and appropriate and that provides the best possible outcome of care.

3 | THE REVIEW

3.1 | Aim

The aim of this study was to identify factors that indicate quality in telephone nursing.

3.2 | Design

This study was an integrative literature review following the methodology described by Whittmore and Knafl (2005). The integrative review method was chosen due to the mixed methodology and heterogeneity of studies included in the review. The reporting of this integrative review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist (cf. Moher et al., 2009).

3.3 | Search methods

The inclusion and exclusion criteria are presented in Table 1. Eligibility criteria were chosen to obtain articles that concerned TN that was nurse provided and related to general health care and/or primary care. The search was performed in the PubMed, CINAHL, Cochrane Library, Academic Search, PsycINFO, Scopus and Web of Science databases. The search string was ("telephone advice nursing" OR "telenursing [MeSH Major topic]" OR "telephone nursing" OR "telenurses" OR "tele triage" OR "telephone triage") AND ("quality" OR "quality of care" OR "quality of health care" OR "quality of health care [MeSH Major topic]")."

3.4 | Search outcome

The systematic literature search generated 395 articles. After exclusion of duplicates and irrelevant matches, a total of 32 articles remained. The literature search process is described in Figure 1.

3.5 | Quality appraisal

The remaining articles were carefully read, and assessment of article quality followed standardized protocols for quality appraisal (c.f. Willman et al., 2006). Both authors independently assessed the quality of the articles, and the results were compared and discussed until consensus. Two articles were excluded from the study due to poor quality; thus, a total of 30 articles were included in the analysis (Table 2).

TABLE 1 Selection criteria

Inclusion	Exclusion
Peer-reviewed scientific articles	Editorials, expert opinions
Available in full text	Nursing through email or video communication
English language	Communication between caregivers
TN in primary care or related to general health care	Follow-up after inpatient care or TN related to a specific disease or population.
Nurse-provided TN	TN related to education
	Articles published before 2004

Abbreviation: TN, Telephone nursing.

3.6 | Data abstraction

According to Whittmore and Knafl (2005), the data analysis is divided into the following four steps: (a) data reduction; (b) data display; (c) data comparison; and (d) conclusions with verification. The first step in the data reduction phase involved the determination of the overall classification system. The classification system in this study was Donabedians (2005) three areas of quality, with subgroup classifications *structure*, *process* and *outcome*. Relevant data in the form of textual units that corresponded to the study's purpose were extracted independently by both authors from the primary sources. Extracted data were then discussed until consensus and then jointly by both authors organized in accordance with the subgroup classifications. Data were compiled into a spreadsheet and displayed in matrices to facilitate visualization.

3.7 | Data synthesis

A narrative synthesis of qualitative and quantitative studies was applied (cf. Whittmore & Knafl, 2005). The extracted data from the primary sources were condensed and similar data ordered and grouped together within the subgroup classifications. Data were compared and categorized in several steps and grouped according to the characteristics that expressed quality in TN. The findings were then compared against the original data and the final categories were discussed by both authors until consensus was reached.

4 | RESULTS

In total, 10 factors indicating quality in TN were identified: four factors related to the structure, three factors related to the process and three factors related to the outcome of TN (Table 3).

4.1 | Structure

4.1.1 | Availability and simplicity

In order for TN to be of high quality, the service needs to be accessible and easy to use and the waiting time needs to be short (Gustafsson et al., 2016; Moscato et al., 2007; Ström et al., 2011). Access to TN is generally perceived as good and the waiting time acceptable (Gustafsson et al., 2016; Holmström et al., 2016; Keating & Rawlings, 2005). Long waiting times result in lower ratings
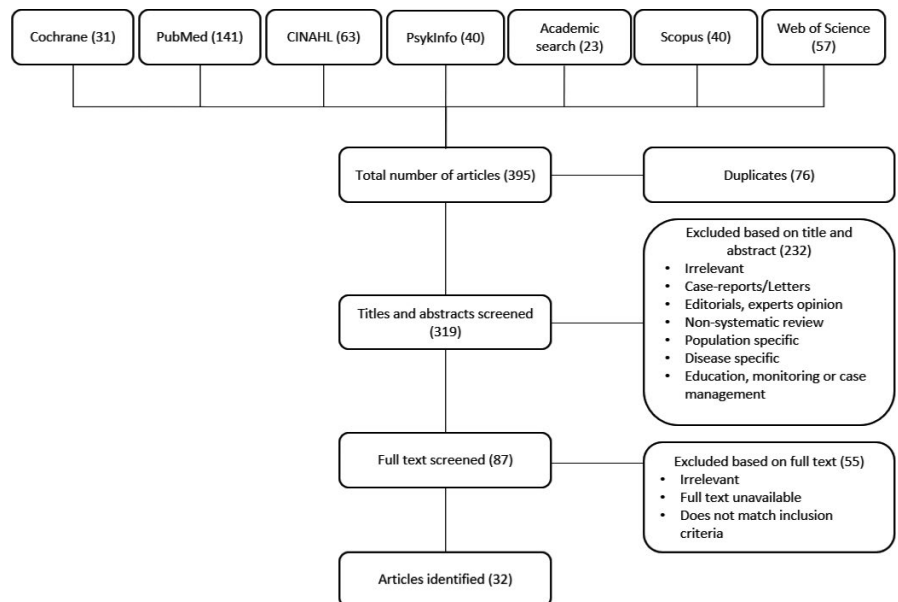
FIGURE 1 Search process

TABLE 2 Articles included in the analysis (*n* = 30)

Author/Year/Country	Design	Participants	Main findings	Quality
Allan et al. (2014), Great Britain	Cross-sectional study	171 participants	Higher levels of stress were associated with more frequent deficiencies in attention, memory, concentration and information processing. Nurses who experienced more frequent cognitive failures made more conservative decisions and tended to refer patients to other caregivers more often	High
Blank et al. (2012), Great Britain	Systematic review	54 articles	Triage decisions were considered correct in 44%–98% of cases, and compliance ranged from 56%–98%. Referrals to primary care may have lower compliance than decisions to contact emergency care or self-care	High
Bunn et al. (2004), Great Britain	Systematic review	9 articles	TN reduces physician visits, but might delay consultations. No difference in mortality between nurse's telephone counselling and regular care. No evidence of an increase in adverse effects or use of other services, and patients were satisfied	High
Derkx et al. (2008a), Netherlands	Cross-sectional study	17 call-centres	Correct referral and assessment was achieved in 58% of the calls. Deficiencies were identified, and a need for training of staff to increase the quality of communication. Ensuring that the nurse asks appropriate questions, evaluates the answers and gives the right advice on care. Answers to questions were not always clinically correct. The quality of self-care advice and safety netting was below standard	Medium
Derkx et al. (2008b), Netherlands	Cross-sectional study	357 participants	Clinical questions were generally correct, but the nurses asked few questions about the personal situation, the patient's perception of the problem or the patient's expectations. Advice was often given without checking if the caller understood or accepted the advice	Medium
Ernesäter et al. (2009), Sweden	Qualitative interview study	8 participants	Nurses experienced working with decision support tools (DSTs) as both supportive and limiting. DSTs simplified the work, supplemented their knowledge and gave them security and improved their credibility. DSTs were also perceived as incomplete and sometimes in conflict with their own assessments	High
Gamst-Jensen et al. (2017), Denmark	Mixed methods study	937 056 calls	327 calls were identified as under-triaged, representing 0.04% of all calls. Thematic analysis of the recordings found that inadequate communication and non-normative symptom description contributed to under-triage	High
Giesen et al. (2007), Netherlands	Cross-sectional study	4 primary care centres	Nurses rated the severity correctly in 69% of cases and underestimated the severity in 19% of cases. A significant correlation was found between correct estimation of severity and training in using clinical guidelines. The nurses' educational background (inpatient or outpatient care) had no significant correlation with underestimation	Medium
Gustafsson et al. (2016), Sweden	Cross-sectional study	225 participants	Young adults and people referred to self-care were less satisfied with the TN. Self-care counselling had a reductive effect on healthcare consumption. Feeling safe after the conversation affected satisfaction the most	High
Gustafsson et al. (2018), Sweden	Qualitative interview study	12 participants	The participants wanted to feel that the nurse was a real person who was sympathetic, present and understanding. The nurse's assessment and reasoning facilitated callers' own risk assessment, and clear and concrete advice on how to manage the symptoms had a calming effect. Patients needed to trust that the nurse understood their situation in order to trust the advice, and being invited to call back created a sense that the nurse had listened and taken them seriously	High

TABLE 2 (Continued)

Author/Year/ Country	Design	Participants	Main findings	Quality
Holmström and Höglund (2007), Sweden	Qualitative interview study	12 participants	Ethical dilemmas in telephone counselling are talking through a third party; discussing personal and sensitive issues over the phone; inadequate resources and the organization of health care; balancing patients' information needs with professional responsibility; and differences in the assessment of patient credibility	High
Holmström et al. (2016), Sweden	Qualitative interview study	10 participants	Older people perceived TN as reliable, although some disadvantages were identified. Communication is crucial to building a mutual understanding of older people's health problems. Older people's satisfaction was related to patient-friendly aspects of telephone counselling	High
Huibers et al. (2011), Netherlands	Systematic review	13 articles	The assessment in TN was patient-safe in 97% of cases and in 89% of cases with high severity. When using simulated patients, TN was safe in 46% of cases. Negative consequences of fault assessment were death, hospitalization, contacting emergency care and medical errors	Medium
Huibers et al. (2012), Netherlands	Cross-sectional study	6,739 calls	The majority of assessments were correct. Correct assessments were positively related to higher consultation quality. Higher consultation quality was related to a more accurate estimate of severity, follow-up advice and timely decisions	High
Kaminsky et al. (2017), Sweden	Narrative review	24 articles	Taking an individualized and respectful approach is important. This includes involving callers because this can increase patient satisfaction and adherence to counselling. Failure to listen to the patient may be the most common cause of incorrect assessments, and stressful working conditions for telephone nurses can affect patient safety	High
Keating and Rawlings (2005), Australia	Cross-sectional study	101 participants	The majority felt that their calls had been answered promptly, everyone understood the advice given to them, and 96% were satisfied with the advice	High
Lake et al. (2017), Australia	Systematic review	10 articles	TN quality was reported with nine key indicators - access, suitability, compliance, patient satisfaction, cost, safety, healthcare consumption, physician workload and clinical outcomes. Satisfaction with the counselling was generally high, and there was some evidence that TN reduced the clinical workload. No differences in patient safety were found between TN and traditional care	High
Lännerström et al. (2017), Sweden	Cross-sectional study	114 participants	TN to persons on sick leave consisted of booking appointments and serving as a guide, counsellor, caretaker and coordinator. The nurses expressed a need for more education	High
Marklund et al. (2007), Sweden	Cross-sectional study	362 participants	TN was considered adequate in 325 (97.6%) of cases. Compliance to self-care advice was 81.3%, compliance to primary care was 91.1%, and compliance to emergency care was 100%. The cost savings per call that led to a recommendation of self-care were EUR 70.3, to primary care were EUR 24.3, and to emergency care were EUR 22.2	High
Moscato et al. (2007), USA	Cross-sectional study	1939 participants	The strongest predictors of satisfaction were the patient's state of health and their experience of the nurse's clarity, competence and ability to listen and collaborate	Medium
Murdoch et al. (2015), Great Britain	Qualitative interview study	44 participants	Staff experiences and perceptions of TN are shaped by the communication between staff and leaders, and how management prepares for and sustains the changes required to implement triage effectively. They are also shaped by the existing practice culture and staff and patient behaviour arising in response to the changes made	High

TABLE 2 (Continued)

Author/Year/ Country	Design	Participants	Main findings	Quality
Ng et al. (2012), Australia	Prospective observational study	2,160 participants	The appropriateness of nurses' referrals to emergency care is similar to the appropriateness of patients' self-referrals but is lower than the appropriateness of physician referrals. Patients are very good at judging that they are seriously ill and require urgent care	High
Rahmqvist et al., (2011), Sweden	Cross-sectional study	273 participants	There were no differences between cases, controls and other callers about background factors or the nurse's assessment of the severity	High
Richards et al. (2004), Great Britain	Cross-sectional study	218 participants	There was high agreement between triage nurses and reviewers in identifying the cause of the call. However, there were only moderate levels of agreement between doctors and nurses about information sought and the appropriateness of the results. The reviewers assessed the collection of information as poor in 19% of the calls, and seven calls were classified as potentially dangerous	High
Röing et al. (2013), Sweden	Qualitative observational study	121 calls	Threats to patient safety could be related to the surrounding community, to the organization of TN, to the nurse and to the caller	High
Smits et al. (2017), Netherlands	Cross-sectional study	114 calls	Full agreement between triage nurses' decisions and external reviewers in 45% of cases and reasonable agreement in 73% of cases	Medium
Ström et al. (2011), Sweden	Cross-sectional study	517 participants	Three factors – interaction, service and product – emerged to describe satisfaction with TN. The items "friendliness," "respect," "affirmation," "accessibility" and "simplicity" scored highest, while "joint decision-making," "calm" and "time" had the lowest values	High
Wahlberg et al. (2005), Sweden	Qualitative interview study	7 participants	The basis for the nurses' assessment was based on three different contexts: care-seeker-related, nursing-related and organizational-related	High
Varley et al. (2016), Great Britain	Cross-sectional study	45 participants	Specialist nurses were less likely to refer patients to physicians than undergraduate nurses. Nurses who reported that their past experience had prepared them less well for triage were more likely to refer patients to physicians	High
Wheeler et al. (2015), USA	Systematic review	19 articles	Nurses had the most accurate referrals (91%), while doctors had 82% on average. Triagists without formal education had no telephone counselling system and did not provide counselling following standardized guidelines	High

of the nurse's reception, ability to listen and ability to show compassion. Long waiting times also result in lower satisfaction with the information, help and advice received, feelings of safety after the call and total satisfaction with the medical advice (Gustafsson et al., 2016):

> Once I had to wait 'til the next day to get a call back, so that was indeed a long wait. Then you don't really know what to do, when you need immediate help… (Holmström et al., 2016).

Many elderly people find it difficult to trust the telephone system and can feel unsure if they have pressed the right buttons. Some feel reluctant to call TN because of the impersonal nature of the system and because they are unsure if their case is acute or if the waiting time will be long (Holmström et al., 2016).

4.1.2 | Sustainable working conditions

Nurses' working conditions and work situation affect the quality of medical advice and stress affects the cognitive ability of nurses, leading to decreased efficiency and increased errors (Allan et al., 2014; Kaminsky et al., 2017). According to Allan et al. (2014), both general stress and shift-related stress lead to an increased number of cognitive errors during work and nurses who are stressed more often refer care-seekers to other healthcare services and need more time for documentation and paperwork after a completed call. During stressful shifts, nurses handle information faster than during quiet shifts, but they tend to make more errors in information processing. According to Kaminsky et al. (2017), TN is a complex task and requires the ability to perform many tasks simultaneously. Multitasking, stress, shift work, fatigue and understaffing have been described as factors linked to malpractice claims:

Managers stressed the complexity of TN work and saw multitasking as one of the more specific challenges in TN. In addition, stress, shift work, fatigue, understaffing and system factors were possibly contributory to the malpractice claims. (Kaminsky et al., 2017)

According to Röing et al. (2013), nurses express that problems with the technical equipment such as computers or headset can cause stress and a feeling of not being in control. Expectations on short waiting times from the organization and care-seekers can also cause stress among nurses because they limit the time available for each call. Working with health-promotion and giving self-care advice is difficult when the time for each call is short and the demands to handle many calls are high. Also, being under constant supervision causes pressure on the nurses (Kaminsky et al., 2017).

4.1.3 | Specialist education and experience in TN

Experience is an important part of the nurse's expertise in TN. One strategy that nurses use is to rely on past and personal experiences when assessing care-seekers' symptoms (Röing et al., 2013). Having education and experience in TN increases the quality of medical counselling by making nurses better prepared for their role (Giesen et al., 2007; Varley et al., 2016). Nurses who have received training in working according to national and clinical guidelines make more accurate assessments and less often underestimate the severity of cases (Giesen et al., 2007):

A need for changes in both organizational and professional attitudes toward safety and risk for error was suggested. (Kaminsky et al., 2017)

Experienced nurses and specialized nurses and advanced specialist nurses have reported that they are better prepared to work with TN compared with undergraduate nurses and nurses with no experience in TN (Varley et al., 2016). Giesen et al. (2007) found no significant difference in nurses' assessment ability depending on whether the nurses' background was from outpatient or inpatient care.

4.1.4 | Healthcare resources and organization

In order for TN to be of high quality, other parts of the healthcare organization also need to function well so that the referral of care-seekers can be done correctly (Holmström & Höglund, 2007; Röing et al., 2013; Wahlberg et al., 2005). Lack of collaboration between caregivers, or caregivers' reluctance to assume responsibility for a patient, makes TN more difficult (Röing et al., 2013). Many nurses find it unethical that some care-seekers and groups "fall through the cracks" in the healthcare organization (Holmström & Höglund, 2007; Kaminsky et al., 2017). Nurses sometimes have to make their judgment based

on what health care is available at the moment, rather than on the patient's actual needs (Wahlberg et al., 2005). Nurses also call for additional resources for TN so that TN does not become an unreasonable burden on nurses' existing workload (Murdoch et al., 2015):

Nurses sometimes had to base their assessments on how accessible the health-care service was. (Wahlberg et al., 2005).

It is important that the exchange of information takes place in a safe and secure way because sensitive information is discussed over the telephone and the nurse can never be completely sure of the caller's true identity (Holmström & Höglund, 2007; Kaminsky et al., 2017).

4.2 | Process

4.2.1 | Good communication

One of the difficulties that can affect the quality of TN is that the nurse and the care-seeker do not see each other. Nurses may experience uncertainty when they do not see the caller in person and especially if the care-seeker does not describe symptoms clearly (Röing et al., 2013). By not being able to read care-seeker's reactions and non-verbal communication, additional demands are placed on the nurse's ability to interpret what the care-seeker is saying (Holmström & Höglund, 2007; Wahlberg et al., 2005). It is important that the nurse request to speak directly to the patient if the information about the patient is provided by another party. Although nurses strive to talk to the care-seeker, it is sometimes necessary to obtain information through a relative or friend and this secondary information can cause ethical dilemmas and information gaps (Gamst-Jensen et al., 2017; Holmström & Höglund, 2007; Smits et al., 2017):

"Physical distance where the caller and patient were not at the same location offered a specific barrier to symptom description and was often resolved with the request to call back when in the presence of the patient" gaps (Gamst-Jensen et al., 2017).

If the nurse and care-seeker do not understand each other, the assessment can be incorrect or the advice can be misunderstood or simply not followed (Blank et al., 2012). Enabling communication requires time, an environment that is calm and free from disturbances and that the nurse uses a language that the call-seekers understand (Holmström et al., 2016). To promote understanding, the nurse should ensure and verify that care-seekers have truly understood what was said, either by crosschecking or through a follow-up call (Gustafsson et al., 2018; Holmström et al., 2016; Kaminsky et al., 2017; Smits et al., 2017). Providing concise information that can be clearly understood by the caller is important, and asking whether the care-seeker has understood the advice and that the advice is perceived as feasible. The nurse also needs to check if the caller agrees to the action recommended and

must show acceptance if the caller does not agree. A further strategy is to summarize the information for the care-seeker and to verify and adapt the summary as needed (Smits et al., 2017). If the nurse provides too much information, this might cause stress and confusion for the care-seeker (Kaminsky et al., 2017):

> It might be that you are seeking this reassuring feeling, that you get some advice and that brings a sense of calm. (Gustafsson et al., 2018)

Factors that promote good communication are the nurse's ability to obtain correct information and to draw correct conclusions by properly structuring the conversation, asking the right questions, being supportive in the conversation, showing understanding and giving clear advice (Derkx et al., 2009; Gustafsson et al., 2018; Holmström et al., 2016; Kaminsky et al., 2017; Richards et al., 2004; Smits et al., 2017). Factors that inhibit communication and thus can negatively affect the quality of TN are behaviours such as anger and irritation, language problems, lack of structure in the conversation, complex information, lack of understanding of the problem, difficulties in explaining symptoms, speaking too quickly and a lack of time (Gamst-Jensen et al., 2017; Gustafsson et al., 2018; Holmström et al., 2016; Kaminsky et al., 2017; Röing et al., 2013). The nurse therefore needs to give the care-seeker sufficient time to describe the situation and needs to ask relevant questions (Smits et al., 2017).

4.2.2 | Person-centred care

TN is perceived as being of good quality when the nurse is respectful, friendly and calm and confirms the care-seeker (Derkx et al., 2009; Gustafsson et al., 2018; Holmström et al., 2016; Kaminsky et al., 2017; Ström et al., 2011). The care is person-centred when the care-seeker is met in a professional manner, is listened to and taken seriously and feels welcomed regardless of the magnitude of their symptoms (Gustafsson et al., 2018; Holmström et al., 2016; Moscato et al., 2007). Care-seekers also describe that TN is perceived as positive when they feel like they are on the same level as the nurse and that they feel secure when the nurse cares for them (Gustafsson et al., 2016, 2018; Holmström et al., 2016). Collaboration or shared decision-making is described as important for high-quality care because care-seekers want to be involved in the decisions (Gamst-Jensen et al., 2017; Moscato et al., 2007; Ström et al., 2011). Collaboration, a sense of being in focus during the conversation and care that is based on the needs of the caller are critical factors for person-centred care (Gamst-Jensen et al., 2017; Gustafsson et al., 2018; Holmström et al., 2016; Moscato et al., 2007):

> The important thing is that they care and that it's not too general. They should consider that it's me who is the patient and I should be in the center. (Holmström et al., 2016)

Poor-quality care and non-person-centred care are described when the caller feels abandoned and neglected and when the nurse is only focused on symptoms or is disrespectful to the caller (Derkx et al., 2009; Holmström et al., 2016; Kaminsky et al., 2017).

4.2.3 | Competence

Callers are satisfied with TN when they experience the nurse as competent (Keating & Rawlings, 2005; Moscato et al., 2007). An important part of the nurse's competence is the ability to evaluate the patient's symptoms, but there is a risk that the nurse will provide an incorrect diagnosis if the reasoning is too narrow instead of evaluating the symptoms more broadly (Gamst-Jensen et al., 2017). When the nurse's experience and knowledge is reflected in the conversation, care-seekers feel calm and confident and they feel confidence in the nurse when they experience a mutual understanding (Gustafsson et al., 2018):

> Then I got an explanation and if you know what it is, then you feel reassured. (Gustafsson et al., 2018)

When the nurse feels uncertain about the assessment, they will sometimes call back to the care-seeker to check on the course of the symptoms (Holmström et al., 2016; Wahlberg et al., 2005). The nurse is perceived as competent when he or she acknowledges insecurities in the assessment and consults with a colleague or a doctor (Gustafsson et al., 2018; Holmström et al., 2016).

4.3 | Outcome

4.3.1 | Correct and safe care

In order for TN to be of high quality, it is important that the assessments, referrals and advice given are accurate and reliable (Blank et al., 2012; Derkx et al., 2008; Ernesäter et al., 2009; Gustafsson et al., 2016; Huibers et al., 2011, 2012; Kaminsky et al., 2017; Lake et al., 2017; Marklund et al., 2007; Ng et al., 2012; Rahmqvist et al., 2011; Richards et al., 2004; Smits et al., 2017; Ström et al., 2011; Wheeler et al., 2015). Accuracy of referrals varied between 44%–98%, with a median of 75%. Underestimation of the severity of the symptoms with a risk of injury was found in 1.3%–3.2% of calls (Blank et al., 2012). Wheeler et al. (2015) found that 99.7% of all referrals were accurate. Huibers et al. (2012) found that nurses make correct judgments in >90% of cases. The correctness of the decisions was found to decrease with increasing severity of symptoms. In cases where the nurse's decision was judged to be correct, the nurse achieved a higher score on assessment of the quality of the consultation. Conversations where the patient's symptoms were severe were associated with poorer consultation quality:

TABLE 3 Factors influencing quality in telephone nursing

Structure	Process	Outcome
Availability and simplicity	Good communication	Correct and safe care
Sustainable working conditions	Person-centredness	Efficiency
Specialist education and experience in TN	Competence	Satisfaction
Healthcare resources and organization		

> The quality of consultation was positively related to appropriateness of decisions. (Huibers et al., 2012)

There is no clear evidence that the accuracy of the assessments differs between physicians and nurses because the results vary between studies (Blank et al., 2012; Bunn et al., 2004; Ng et al., 2012; Richards et al., 2004). Individual variations in knowledge and experience appear to play a greater role than profession (Blank et al., 2012; Derkx et al., 2008). Research on real patient cases has shown that between 3%–10% of assessments via TN carry the risk of patient injury (Huibers et al., 2011, 2012; Marklund et al., 2007). Safety netting, that is informing about the importance of returning or consulting health care again if a health problem arises or changes, is described as an important strategy for maintaining patient safety Derkx et al., 2008. A computerized digital support system (CDSS) gives an indication of the appropriate level of care, but according to Ernesäter et al. (2009), the level of safety when using a CDSS is perceived by nurses as too low. Using a CDSS increases access to equal care regardless of the nurse's expertise and geographical location. All care-seekers should have access to advice based on evidence and national guidelines, independent of the person answering the call. Documentation is an important safety measure because it enables an understanding of assessments and decisions based on the symptoms (Marklund et al., 2007):

> Documentation was adequate (99%); meaning that, the information registered enabled the choice of action to be understood on the basis of the case history. (Marklund et al., 2007).

Kaminsky et al. (2017) found that incorrect assessments were the basis for 25% of malpractice claims. The most common malpractice claims were complaints from other caregivers about over- or underestimation of the severity of the symptoms and incorrect referrals because the correct level of care was not available presently. Accepting the patient's opinion of what was wrong without collecting enough information and making an independent assessment was a security risk that was identified.

4.3.2 | Efficiency

In order for TN to be of high quality, it needs to be effective (Blank et al., 2012; Lake et al., 2017). This implies that TN contributes to the correct use of healthcare resources, refers to the appropriate level of care, is cost-effective, reduces clinical workload and improves clinical outcomes. TN can potentially reduce the workload of physicians and contribute to improved clinical outcomes for the patient, but it is not likely to be effective unless care-seekers follow the advice (Lake et al., 2017):

> We identified the following nine quality, safety and governance dimensions from the available evidence: access, appropriateness, patient compliance, patient satisfaction, cost, safety, health service utilisation, clinical workload and clinical outcomes. (Lake et al., 2017)

The adherence to TN advice ranges from 56%–98%, with a median of 77% and adherence to advice to seek primary care is lower than advice to seek emergency care (Blank et al., 2012). Caregivers who are satisfied with TN are more likely to follow the nurse's advice and referral (Blank et al., 2012; Lake et al., 2017). Compliance to advice is greater in cases where a correct assessment and advice has been obtained (Blank et al., 2012; Marklund et al., 2007):

> Four studies suggested that patient satisfaction with the triage decision improved the rate of compliance. (Blank et al., 2012)

Several factors that affect compliance, including the expectations and experiences of caregivers and the quality of communication with the nurse. Compliance varies depending on what advice has been given and on the patient's intentions before the call for healthcare advice and the patient's symptoms, age and income (Lake et al., 2017).

4.3.3 | Satisfaction

High-quality TN implies that care-seekers are satisfied with the service and that TN meets their needs (Blank et al., 2012; Bunn et al., 2004; Kaminsky et al., 2017; Lake et al., 2017; Ström et al., 2011). According to Bunn et al. (2004), there is no significant difference between TN and physical encounters with the nurse. However, callers that are recommended self-care are less satisfied with TN compared with callers who are referred to primary or emergency care (Gustafsson et al., 2016). In general, care-seekers are satisfied with TN (Gustafsson et al., 2016; Lake et al., 2017) and satisfaction affects adherence to the nurse's referral and advice (Blank et al., 2012):

...patient satisfaction with the triage decision improved the rate of compliance. (Blank et al., 2012)

Feeling safe after the call improves satisfaction, and getting help and answers to relevant questions and problems (Gustafsson et al., 2018; Ström et al., 2011). Care-seekers' expectations for TN vary and satisfaction varies depending on expectations. According to Moscato et al. (2007), callers are to a greater extent satisfied when their expectations are met and when they call for advice or when they call about new symptoms or to request a new appointment. If the caller and the nurse are not in agreement with the course of action, the consequence might be a dissatisfied care-seeker who seeks an unnecessarily high level of health care (Rahmqvist et al., 2011). To meet the needs of the care-seeker, the nurse needs to establish a trusting relationship with the caller; maintain patient safety; assess, refer and advise the patient; and teach the patient (Kaminsky et al., 2017).

5 | DISCUSSION

In this study, the following 10 factors were identified as indicating quality in TN: *availability and simplicity of the service*, *sustainable working conditions*, *specialist education and experience in TN*, *health-care resources and organization*, *communication*, *person-centeredness*, *competence*, *correct and safe care*, *efficiency* and *satisfaction*.

5.1 | Structure

The results showed that sustainable working conditions are indicative of quality of TN. Stress, fatigue, long queues and time pressure affect the cognitive ability of the nurse and cause the nurse to make more mistakes. According to Wahlberg and Björkman (2018), telephone nurses describe that they feel exhausted after long shifts, especially when the telephone queues have been long because long queues limit the opportunity of recovery between calls. This fatigue can lead to a deterioration of cognitive ability and can create worry and a fear of making erroneous judgments. The inability to visually assess the caller's condition and the risk of linguistic confusion can generate feelings of uncertainty, anxiety and inadequacy that make a deep and lasting impact on the nurse's emotional state of mind (Eriksson et al., 2019). Cognitive fatigue and lack of opportunities for recovery during the work shift negatively affect the nurse's ability to give good care (Björkman et al., 2017). Stress and fatigue adversely affect patient safety and are contributing factors to malpractice claims and medical errors. Working in a calm environment and being able to focus on one care-seeker at a time are factors that contribute to a positive work situation and increase the nurses' opportunities to make correct assessments (Röing & Holmström, 2015). This is especially important when managing difficult calls that can be emotionally draining (Eriksson et al., 2019). Receiving support from colleagues and management is important and contributes to the nurses' lifelong learning (Björkman et al., 2017). The use of a CDSS can also serve as an aid for assessment and can provide nurses with new knowledge and confirm their decisions (Holmström et al., 2019).

5.2 | Process

We found that person-centred care was indicative of quality in TN and such care is characterized by a holistic view and meeting the patient's social, psychosocial, existential and spiritual needs to the same extent as their physical needs (McCormack & McCance, 2006). According to Raja et al. (2015), not feeling listened to, cared for, or seen as an entire human being can lead to feelings of dehumanization in the sense that patients feel that their needs are secondary or unimportant to the caregiver. Person-centred care on the other hand facilitates communication between the caregiver and the care-seeker and leads to the care-seeker feeling listened to, respected and understood. Active listening is a technique frequently used in TN to improve communication and involves listening with empathic responding using both words and actions such as paraphrasing, summarizing and checking comprehension (Nemec et al., 2017). Active listening means asking questions that indicate an interest and allowing the care-seeker to tell their story in their own way (Robertson, 2005). Active listening thus opens up for the caller to provide a personal narrative and understanding of their situation. At the end of the conversation, the most important information and joint decisions on further actions are summarized (Robertson, 2005) and the nurse checks for comprehension by asking the caller to describe their understanding of further management of their case (Hansen & Hunskaar, 2011). Another communicative strategy frequently used in TN to reduce risk of adverse events is safety-netting. Safety-netting involves the provision of information to the patient on red-flag symptoms, the natural course of the illness and advice on how to access further health care if needed and aims to enable patients to identify signs of serious illness and seek timely continued health care when appropriate (Jones et al., 2019).

5.3 | Outcome

We found that assessments, referrals and advice need to be accurate and reliable. The loss of visual cues impedes examination and assessment of the caller's status, thus requiring a need for heightened verbal skills (Eriksson et al., 2019; McKinstry et al., 2008). The nurse's ability to obtain correct information, to structure the conversation, to ask the right questions, to be supportive of the caller, to show understanding and to give clear advice is important for good communication. A significant discrepancy between the advice documented by the nurse and the advice perceived by the caller has been found (Leclerc et al., 2003). If the nurse and care-seeker do not understand each other, these misunderstandings can lead to incorrect assessments or the advice not being followed (McKinstry et al., 2008). Incorrect assessments or poor compliance to advice will potentially

result in an increased risk of medical errors, dissatisfaction and inefficiency due to untimely or inappropriate use of healthcare resources.

5.3.1 | Strengths and limitation

A pilot search was carried out in several electronic databases to ensure that there was scientific literature in the field and to identify the most suitable keywords. Despite the systematic search and well-defined selection criteria, there is a risk that relevant literature has been missed. A strength of this review was that we searched several different databases with broad search terms. All included articles were subjected to quality appraisal by both authors following existing protocols for quality assessment. Two articles of poor quality were excluded. To ensure credibility in the data extraction, all text units were discussed until consensus was reached and were checked in relation to the original text to verify correct understanding. To strengthen reliability, both authors jointly collected, analysed and interpreted the data to minimize the risk of misinterpretation and the categorization was discussed to reach consensus. The procedures and the search process have been described in detail to ensure reproducibility and confirmability.

6 | CONCLUSIONS

In order for TN to be of high quality, the service needs to have high availability, short waiting times and be easy to use for care-seekers. The healthcare organization should ensure that telephone nurses have a positive working situation with peace and quiet during the work shift and enough time for each call to reduce stress and thus reduce the risk of errors. Nurses' education and competence have an impact on the quality of TN, but despite this, there are many triagists and undergraduate nurses without specific training in working with TN. Because of the complexity of TN, it should rather be specialist nurses with an in-depth expertise in both nursing and medicine who are working with TN. Medical competence is crucial to making correct assessments and giving adequate advice and caring competence is central to providing person-centred care that enables high-quality communication and gathering of information. More research about the process of communication during TN is needed to improve quality and patient safety.

6.1 | Clinical implications

Nurses working with TN should undergo clinical training in communication processes and apply person-centred care to meet patient's individual needs. We recommend that nurses receive feedback on medical assessments and decisions to enable progression of their own learning, and ongoing scheduled reflection sessions where nurses working with TN receive support in reflecting on quality indicators for TN.

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