Patient Education and Counseling 151 (2026) 109776

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.journals.elsevier.com/patient-education-and-counseling

Communicating emotional distress during registered nurse-led primary care consultations: From recognition to exploration of health concerns

Karin BERGMAN [a,*,1], Malin ÖSTMAN [b,c,d,2], Annelie J. SUNDLER [a,e,3], Sandra VAN DULMEN [f,g,4], Jenny HALLGREN [h,5], Lena HEDÉN [a,6]

[a] Faculty of Caring Science, Work Life and Social Welfare, University of Borås, Borås, Sweden
[b] Research, Education, Development & Innovation, Primary Health Care, Region Västra Götaland, Sweden
[c] General Practice / Family Medicine, School of Public Health and Community Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden
[d] School of Health, Care and Social Welfare, Mälardalen University, Västerås, Sweden
[e] The Swedish Red Cross University, Stockholm, Sweden
[f] Nivel (Netherlands Institute for Health Services Research), Utrecht, the Netherlands
[g] Department of Primary and Community Care, Research Institute for Medical Innovation, Radboud University Medical Center, Nijmegen, the Netherlands
[h] School of Health Sciences, University of Skövde, Skövde, Sweden

ARTICLE INFO

Keywords:
Communication
Concerns
Cues
Emotional expressions
Person-centred care
Registered Nurse
Primary Care

ABSTRACT

Objective: To explore patients' expressions of emotional distress and subsequent Registered Nurses' (RNs') responses in primary care consultations.
Methods: This observational study included a consecutive sample of 147 audio recorded RN-led consultations with adult patients seeking primary care for a new health problem. Expressions of emotional distress were analysed using the Verona Coding Definitions of Emotional Sequences.
Results: Patients expressed emotional distress in one-third of the recorded consultations. A total of 165 expressions of emotional distress were identified, comprising 140 cues and 25 concerns. The RNs' responses primarily provided space for further disclosure of the emotional expressions (125, 75.8%). No statistically significant differences in RNs' response types, such as providing or reducing space, were found based on patients' sex, age, or native language.
Conclusion: RNs demonstrated proficiency in recognising patients' expressions of emotional distress and in facilitating further disclosure in an inclusive manner that aligns with principles of person-centred care.
Practice implications: Encouraging recognition of emotional distress through active listening and an engaged communication approach may enhance RN communication and optimise conditions for person-centred care.

1. Introduction

Primary Care (PC) serves as the foundation of health systems and plays a central role in improving population health by providing first contact, continuous, comprehensive, coordinated and generalist care [1]. In Swedish PC, registered nurses (RNs) often serve, alongside physicians, as the first point of contact for patients seeking help with new health concerns, meeting the growing demand for healthcare [2]. In

Abbreviations: PC, Primary Care; RN, Registered Nurse; VR-CoDES, Verona Coding Definitions of Emotional Sequences.

* Corresponding author.
E-mail addresses: karin.bergman@hb.se (K. BERGMAN), malin.ostman@vgregion.se (M. ÖSTMAN), annelie.sundler@rkh.se (A.J. SUNDLER), S.vanDulmen@nivel.nl (S. VAN DULMEN), jenny.hallgren@his.se (J. HALLGREN), lena.heden@hb.se (L. HEDÉN).
[1] ORCID: 0000-0002-0530-9408
[2] ORCID: 0000-0002-7633-482X
[3] ORCID: 0000-0002-9194-3244
[4] ORCID:0000-0002-1651-7544
[5] ORCID: 0000-0003-1819-0896
[6] ORCID: 0000-0001-7067-2687

https://doi.org/10.1016/j.pec.2026.109776
Received 16 March 2026; Received in revised form 11 July 2026; Accepted 14 July 2026
Available online 15 July 2026
0738-3991/© 2026 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

these consultations, RNs perform not only triage but also conduct independent consultations and provide care, with the option to consult a physician when necessary [3], thus playing a key role in initial assessment, decision-making, and patient guidance [4].

Patient consultations are complex communicative events, and effective communication is central to high-quality, safe healthcare, effectuating person-centred care that focuses on each patient as a whole person [5]. In a person-centred approach, healthcare professionals actively listen to and respond to the patient's narrative and lived experience to co-create a meaningful care plan [6]. Although communication between patients and physicians is a well-established field of research [7, 8], communication within nursing remains relatively underexplored, despite its growing importance in contemporary practice [9]. Moreover, patient characteristics such as age, sex, and language barriers have been reported to influence the communication and interaction during healthcare consultations. Differences in help-seeking behaviours, symptom presentation, communication styles, and responses to health information may affect the quality of interactions, patient participation, and healthcare outcomes [10–12]. These factors may also influence how patients describe and communicate their symptoms and concerns to healthcare professionals. Emotional expressions and signals of distress constitute essential elements of patient and healthcare professional communication, influencing both the interactional dynamics of the consultation [13] and the clinical reasoning processes guiding care [14]. Patients' emotional expressions offer important insights into their illness perceptions, health problems, and care needs, yet these signals are often underexplored despite their clear relevance for psychosocial understanding [15]. Knowledge of emotional communication in RN-led consultations in PC is scarce and remains an area requiring further research [2]. It is important to understand the dynamics of emotional communication in this context, where RNs serve as the first point of contact for new, often unclear health problems, necessitating an understanding of how emotional communication unfolds in real-time interactions. This study addresses this gap by focusing on the unique communicative challenges and opportunities present in RN-led PC consultations in which a new health problem is presented. The study aims to explore patients' expressions of emotional distress and RNs' responses in PC consultations. The following research questions were addressed: 1. How do patients express emotional distress during RN-led consultations, and are there any differences according to sex, age, or native language? 2. How do RNs respond to or address the patient's emotions? 3. Is the RN's response associated with patient's severity level of their health problem?

2. Material and methods

2.1. Design

The study design was descriptive, observational, and explorative. The guidelines for reporting research using Systematic Coding of Observed human Behaviour (SCOBe) [16] were followed (Appendix A). The study is part of the patient's first point of contact (PINPOINT) project [2].

2.2. Setting and sample

A consecutive sample of RN-led consultations was collected. All RNs working in the designated PC centres were invited to participate in the study. Before commencing data collection, the researchers made preliminary contact with the heads of the PC services in western Sweden to obtain permission to conduct the study at the respective locations and to secure institutional cooperation. The RNs were informed about the study's objective and to make audio recordings of communication during patient visits. All patients who consulted participating RNs during pre-selected study days and met the inclusion criteria were invited to participate. The inclusion criteria for patients were adults aged 18 years or older who were seeking PC for a new health problem or a new episode of a previously known health problem. The patients were invited by a researcher in the waiting room on the day of their consultation. The researcher provided information about the study and its objectives, allowed patients to ask questions, and subsequently obtained written consent. Data were collected from September 2023 to March 2024 at 10 PC centres: eight publicly run and two privately run (under contract), across three geographic regions of West Sweden, in both urban and rural areas.

The RN-led face-to-face consultations included patients who were considered to need a same-day appointment, usually following an initial RN telephone triage [3]. These RN-led consultations were conducted by RNs with general or specialist qualifications. The development of RN-led PC consultations in Sweden is driven by a shortage of physicians and can be seen as an expanded scope of practice, comparable to that of nurse practitioners and advanced practice nurses internationally, but without corresponding education or formal recognition [17]. This form of RN-led consultation is a standard component of Swedish PC and serves as a complement to physician consultations [18]. This model helps manage situations where the number of available physician appointments is insufficient to meet patient demand, ensuring timely access to care within the PC setting.

2.3. Data collection

Audio recordings of patient–RN communication during real-time consultations were collected. Both RNs and patients provided information about sociodemographics. RNs managed the audio recordings themselves after receiving instructions on handling them. To minimise the study's impact on the consultations, researchers were not present during the recordings.

2.4. Coding scheme

To identify expressions of emotional distress and RN responses to these expressions, the Verona Coding Definitions of Emotional Sequences (VR-CoDES) framework was used [19–21]. The VR-CoDES framework allows for the identification and categorisation of both patients' emotional expressions (cues and concerns) and health professionals' immediate responses. Patients frequently express emotional distress through indirect and subtle hints, known as cues, rather than through explicit statements, referred to as concerns. Healthcare professionals' ability to recognise and respond to these expressions is a key factor in relationship building, promoting patient satisfaction, and improving health outcomes [22]. VR-CoDES has been applied in various medical settings, including by physicians in PC [23–25] and by RNs in nursing care contexts such as community home care, mental healthcare, oncology care, and paediatric care [26–31]. The VR-CoDES framework codes sequences of emotional distress directly from audio recordings without prior transcription, using a three-step procedure. First, sequences containing patients' expressions of emotional distress were identified. Patients' expressions of emotional distress were coded as either an explicit concern or as one of the implicit cue types A–G. For a comprehensive description of coded concern and cues, see [21]. A clear and unambiguous verbalisation of an unpleasant emotion was coded as a concern. In contrast, cues were coded when verbal or non-verbal hints suggested the presence of an underlying unpleasant emotion.

In the second step, the coder identified the agent, i.e., the RN or the patient, who elicited the concern or cue. These could be expressed spontaneously by the patient or in response to an RN inquiry. The final step involved coding the RN's immediate response to the patient's expressed concern or cue. Responses were coded along several dimensions: first, as explicit or non-explicit; second, as providing or reducing space for further exploration of the patient's concern or cue; and finally, into categories characterising the specific nature of the response.

To reach consensus and establish inter-rater reliability in coding emotional expressions, the first 25 audio recordings were co-coded iteratively by authors KB and MÖ during ongoing discussions, under the supervision of experienced VR-CoDES coder AJS. Cohen's kappa was used to calculate inter-rater reliability. Co-coding continued until a satisfactory kappa was achieved (kappa = 0.68, $p < .01$). The kappa was based on 20 of the 45 co-coded audio recordings. Thereafter, the first author, KB, continued coding the remaining audio recordings. In addition to the VR-CoDES coding, it was recorded whether each cue and concern related to the patient's reported health problem and reason for the visit or to another aspect of the patient's situation.

2.5. Statistical analysis

To determine the appropriate analytical approach, the data's distributional properties were examined. The Shapiro–Wilk test indicated deviations from normality, and the data were therefore treated as non-normally distributed. Consequently, non-parametric statistical tests were applied in subsequent analyses. Since the same RN attended to multiple patients, the data may exhibit a nested structure. The potential group differences in RN consultations were analysed using the interclass correlation (ICC) regarding RNs' responses to the dependent variable, provide or reduce space, with the result ICC [2,1] = 0.122, 95% CI [0.02, 0.47]. The ICC value of 0.12 indicates that the assumption of independent observations is not fully met. Although the study is primarily descriptive, the hierarchical structure of the data should be considered when interpreting the results.

Descriptive statistics summarised the frequencies and types of cues and concerns, RN responses, and the distribution of response categories. To analyse differences in patients' age between consultations in which patients expressed cues and concerns and those in which they did not, and between consultations in which RNs provided and reduced space, the Mann–Whitney U-test was used. To analyse differences between the above-mentioned consultations regarding patients' sex and native language, the chi-squared test was used.

To analyse the association between consultations in which RNs' responses provided or reduced space for further disclosure and the severity level of patient-reported health problems, Spearman rank correlation was used. The patient-reported health problems were classified into three predefined categories for severity level: I = mild or transient conditions; II = conditions requiring further clinical evaluation, such as diagnostic investigations and/or medication prescriptions; and III = potentially serious, life-threatening, or time-critical conditions. All data were analysed using IBM SPSS Version 31.0.

2.6. Ethical procedures

Ethical approval was obtained from the Swedish Ethical Review Authority (Dnr Ö24-2023/3.1). All participating RNs and patients were provided with verbal and written information about the study's objectives and methods, the voluntary nature of their participation, and their right to withdraw at any time without consequences. All participants provided written informed consent. The data were coded, and participants' confidentiality was maintained. No major risks are anticipated for participants in this study.

3. Results

A total of 147 RN-led consultations were included, involving 30 RNs and 147 patients. For each patient only one consultation was recorded, while RNs recorded 1–8 consultations (Mean = 5.1). The mean consultation duration was 11.7 min, with a range of 2–31 min. For RNs' and patients' demographic characteristics, see Table 1.

Table 1
Demographic characteristics of registered nurses (RN) and patients.

RN (n = 30)	Age year (mean/SD/range/)	48.1/ 10.4/ 27–65
	Work experience as an RN in years (mean/ SD/range)	20.3/ 11.4/ 3–44
	Professional experiences in PC in years (mean/SD/range/)	7.8/ 6.2 / < 1–21
	Female n(%)	27 (90)
	Male n(%)	3 (10)
	Native language Swedish n(%)	28 (93)
	Native language Other n(%)	2 (7)
	Specialist education Yes n(%)	18 (60)
	Specialist education No n(%)	12 (40)
Patients (n = 147)	Age year (mean/SD/range)	55.7 /19.3/ 18–90
	Female n(%)	79 (54)
	Male n(%)	68 (46.)
	Native language Swedish n(%)	126 (86)
	Native language Other n(%)	21 (14)

4. Patients' expressions of emotional cues and concerns

Of the 147 RN-led consultations, patients expressed emotional distress (i.e. cues and/or concerns) in 55 consultations (37.4%), while no such expressions were observed in 92 consultations (62.6%). The 55 consultations including cues and concerns involved 27 of the 30 RNs and 55 of the 147 patients. No statistical differences were found in patient characteristics between consultations in which patients expressed cues and concerns and those in which they did not, for age ($p = .063$), sex ($p = .880$), or native language ($p = .091$). For a description of characteristics of patients in consultations where patients expressed cues and concerns, or not, see Table 2.

A total of 165 cues and concerns were identified, with a mean of 2.98 per consultation (range 1–9). In 19 of the 55 consultations, patients expressed four or more cues and concerns. Patients mostly expressed their emotional distress implicitly as cues, rather than explicitly as concerns. The occurrence of expressed concerns was relatively low (n = 25, 15.2%), whereas a substantially higher number of cues were identified (n = 140, 84.8%). For frequencies and examples, see Table 3.

Most cues and concerns related to the patient's current health problem and reason for the visit (n = 140, 84.8%). The remaining cues and concerns (n = 25, 15.2%) referred to other aspects of the patient's situation, such as their general health status, social problems, or medical treatment.

5. Elicitation of the emotional sequences

The cues and concerns were mainly elicited by the RNs (n = 126, 76.4%), while the remaining cues and concerns were elicited by the patients (n = 39, 23.6%). During repeated listening to the audio recorded consultations, no obvious disparities were observed in RN communication patterns between consultations in which patients expressed cues or concerns, and those in which they did not. Similar RN expressions coded as eliciting cues and concerns occurred in

Table 2
Patients' characteristics in consultations with (n = 55) or without (n = 92) cues and concerns.

Patient characteristics in registered nurse-led consultations	Consultations with cues and concerns	Consultations without cues and concerns
Number of patients (n)	55	92
Mean age of patients (years)	59.7	53.4
Female patients (n)	30	49
Male patients (n)	25	43
Native language Swedish (n)	50	76
Native language Other (n)	5	16

Table 3
Frequencies, definition, and examples of patients' expressed emotional distress as cues and concerns during consultation (n = 165).

Codes	n (%)	Definition of cue and concerns	Example
Concern	25 (15.2)	A clear and unambiguous expression of an unpleasant current or recent emotion where the emotion is explicitly verbalised. Included are patient expressions confirming the health provider's explicit assumption or question about an unpleasant current or recent emotion.	But I'm scared, of course I'm scared. P133
Cue A	11 (6.7)	Words or phrases in which the patient uses vague or unspecified words to describe his/her emotions.	And I'm feeling really, really unwell, and I have this sense of illness in my body, so something is definitely wrong. P26
Cue B	75 (45.5)	Verbal hints to hidden concerns (emphasising, unusual words, unusual description of symptoms, profanities, exclamations, metaphors, ambiguous words, double negatives, expressions of uncertainties and hope).	Wow, damn, what it looks like today after you removed it. P148 So it stabs me every now and then. P1 Yes, yesterday, but then last night it all went downhill again. P12
Cue C	8 (4.8)	Words or phrases which emphasize (verbally or non-verbally) physiological or cognitive correlates (regarding sleep, appetite, physical energy, excitement or motor slowing down, sexual desire, concentration) of unpleasant emotional states. Physical correlates may be described by words such as weak, dizzy, tense, restless, low or by reports of crying, whereas cognitive correlates may be described by words such as poor concentration or poor memory.	I feel so weak in my legs, like I have no energy left. P43
Cue D	15 (9.1)	Neutral expressions that mention issues of potential emotional importance which stand out from the narrative background and refer to stressful life events and conditions.	Now I'm even throwing up the little I manage to get down. P3
Cue E	27 (16.4)	A patient-elicited repetition of a previous neutral expression.	Yeah, it hurts like hell. It's throbbing, all night long I just lay there and it hurt so much. P7
Cue F	0 (0)	Non-verbal cue	
Cue G	4 (2.4)	A clear and unambiguous expression of an unpleasant emotion that is in the past (more than one month ago) or referring to an unclear period of life.	Yes, during COVID, because then I went through absolute hell with this—I had a full-blown panic attack, I could run up and down the house. P75

consultations both with and without subsequent patient expressions of emotional distress. For example, open invitations such as "Can you tell me why you are seeking care today?" occurred in consultations where patients subsequently expressed emotional cues or concerns as well as in consultations where no such expressions were observed.

6. RN responses to patients' cues and concerns

Of the RNs' total responses to patients' cues and concerns (n = 165), 66 (40%) were non-explicit, and 99 (60%) were explicit responses (Table 4). The RNs more often provided space for further disclosure (n = 125, 75.8%) than reduced it (n = 40, 24.2%). The most common responses that provided space for further disclosure were those that explored content, backchannelled, acknowledged content, and provided non-explicit acknowledgment (Table 5).

Table 4
Registered nurses' responses to patients' cues and concerns.

	Responses Providing space n (%)	Responses Reducing space n (%)	Total n (%)
Explicit responses	73 (58.4)	26 (65.0)	99 (60.0)
Non-explicit responses	52 (41.6)	14 (35.0)	66 (40.0)
Total	125 (100)	40 (100)	165 (100)

No statistically significant differences were found in whether RNs provided or reduced space for further disclosure according to patients' sex (p = .765), age (p = .974), or native language (p = .491).

Whether RNs provided or reduced space for further disclosure of patients' cues and concerns was correlated with the severity level of patients' health problems ($r_s = -0.25$, p = .001, n = 165). The results indicate that higher severity is associated with responses that facilitated further patient disclosure, although the relationship is weak.

7. Discussion

Patients' expressions of emotional distress were identified in nearly 40 % of the consultations, mostly implicitly expressed as cues, rather than as concerns. Despite subtle patients' expressions the results show RNs responsiveness in recognising patients' emotional distress by acknowledging, clarifying, pursuing, or offering empathy, reassurance, or support, with no significant differences in how they treat patients across sex, age, or native language. RNs provided space for further disclosure in three-quarters of the expressions of emotional distress and reduced it in only one-quarter. These findings are supported by previous studies [32, 33] reporting similar frequencies of RNs providing space and comparing them to physicians, who respond to fewer than half of patients' emotional cues [15]. A prior study in the PINPOINT project found that patients reported high levels of satisfaction and positive experiences with communication during RN-led consultations [2, 34]. RNs perform well in recognising emotional distress and providing space, which may have contributed to patients' positive experiences. This aligns with previous research showing that patient satisfaction with medical consultations can be linked to patients' opportunities to express cues and concerns, as well as to how physicians respond to such expressions [35].

The most common type of response providing space was explicit exploration of content, which is consistent with findings from medical consultations [36]. This contrasts with previous research in nursing contexts, where non-explicit responses, such as backchanneling and non-explicit acknowledgement, are more common [26, 29, 30]. The high proportions of explicit and RN-elicited responses may be understood within the context of PC consultations, in which patients typically present with a new health problem and RNs focus on gathering comprehensive information to assess the patient's health status, similar to the communicative demands of medical consultations.

The frequency of emotional distress during RN-led consultations is lower than in earlier studies of PC physician–patient consultations, which range from 54 to 100 [23–25, 33]. One explanation could be the more routine nature of visits to RNs compared with those to physicians, in addition to consultations involving fewer patients presenting with mental health problems [37]. This may account for the low frequency of expressed emotional distress, as patients with psychological problems express cues and concerns in 94% of consultations in PC [26]. Most expressions of emotional distress in the current study were conveyed implicitly, with verbal hints to hidden concerns being the most common.

Table 5
Frequency and examples of registered nurses' different responses to patients' emotional distress (n = 165).

Response category		Number of responses n (%)	Example of response
Non-explicit–reducing space	NRIg Ignore	2 (1,2)	P: And I hit myself so terribly hard here on the side, so I honestly can't do much now. RN: Are you bruised here, or… no. P14
	NRSd Shutting down	1 (0,6)	P: And then it's really tough to talk about it because it… yeah, hm… exactly… RN: Yeah, but I'll send it, I need to look over the schedules… P117
	NRIa Information-advise	12 (7,3)	P: How worried do I need to be that this spreads up to the face? … You don't know? RN: Yeah, no, it's really hard to say. P48
Non-explicit–providing space	NPSi Silence	0 (0)	
	NPBc Back channel	29 (17,6)	P: I feel kind of foggy sometimes, kind of tired sometimes. RN: mm P73
	NPAc Acknowledge	23 (13,9)	P: It stabs sometimes, and then I wake up. RN: Yeah, of course. P130
	NPAi Active invitation	0 (0)	
	NPIm Implicit empathy	1(0,6)	P: It's not how it should be. RN: No, not how it should be, exactly. P52
Explicit – reducing space	ERSw Switching	3 (1,8)	P: … nothing damn at all has happened with the treatment then. RN: Noo… can I ask something else? – do you get any help at home? P86
	ERPp Postponing	2 (1,2)	P: I've pulled 5–6 ticks off me this year and they haven't looked like this, and now I see it spreading further down. RN: I'll take a look at this, I'll clean around it first. P109
	ERIa Information-advise	19 (11,5)	P: Very—really painful… pain all the way up into the chest. RN: From the pain? It can be a sharp, stabbing kind of pain. P16
	ERAb Active blocking	0 (0)	
Explicit – providing space	EPAAc Affect acknowledge	9 (5,5)	P: Yeah, it feels humiliating, I'm not lying… I have no reason to… my whole summer has been ruined. RN: Mmm, and you've been sent around and it's been a lot—yes, I understand. P111
	EPAEx Affect explore	2 (1,2)	P: Coughing and so on, and sometimes when I go to bed—I get so scared. RN: Yeah… what are you scared of? P91
	EPAEm Affect empathy	6 (3,6)	P: Yeah, one gets worried, you know. RN: Of course you get worried and wonder what it is. P90
	EPCAc Content acknowledge	18 (10,9)	P: It's more that I'm worried the leg is swelling for some other reason. RN: Mmm yes, and to rule out that it isn't something else. P116
	EPCEx Content explore	38 (23,0)	P: Yeah, today it has, I've been at work, but you get scared too, since I've got pain in the shoulder. RN: From before, or at the same time as this? P146
Total		165 (100)	

Table 6
Registered nurses' response (Providing vs Reducing Space for Further Disclosure) in relation to the severity level of patients' health problems.

Severity level	Provide space, n (%)	Reduce space, n (%)	Total, n (%)
I. Mild and transient	25 (20.0)	20 (50.0)	45 (27.3)
II: conditions requiring further clinical evaluation	89 (71.2)	17 (42.5)	106 (64.2)
III: Potentially serious or time-critical conditions	11 (8.8)	3 (7.5)	14 (8.5)
Total	125 (100.0)	40 (100.0)	165 (100.0)

This is consistent with existing research in a variety of medical and nursing contexts, which concludes that patients seldom express emotional distress explicitly [26, 28, 36].

Most expressions of emotional distress were related to the patient's reason for contact, which emphasises the importance of exploring patients' expressions of emotional distress for clinical reasoning and the assessment process [38], but also for understanding "what matters to patients" and providing support and alleviating worries and fears, in accordance with person-centred care [5, 39]. According to Schouten and Schinkel [24], the more anxious patients were about their current health problems, the more cues and concerns they expressed. Consequently, emotional communication plays a critical role in building trusting relationships to achieve person-centred care.

It is worth noting that whether RNs provided or reduced space was associated with patients' health problem severity level. This suggests that, at higher severity levels, RNs were more likely to respond in ways that facilitated further patient disclosure. Previous research has shown that healthcare professionals' tendency to give space can vary with other health issue-specific factors, such as the type of treatment [36] and the significance of this association needs further exploration.

The findings indicate that RNs demonstrate proficiency in recognising patients' expressions of emotional distress and in facilitating further disclosure in an inclusive manner that aligns with principles of person-centred care.

8. Strengths and limitations

A key strength of this study is its observational design, which uses audio recordings of real-life communication during RN-led consultations in PC. This approach enables detailed examination of interactional dynamics and provides valuable insights into real-world communicative practices [40]. The VR-CoDES is a valid framework for coding patients' cues and concerns, and its ecological validity is considered high, as it approximates real-life situations [41]. Compared with video recordings, audio recordings provide a more limited account of non-verbal communication. Although audio captures paralinguistic features such as tone of voice, pacing, and responsiveness, video additionally conveys facial expressions, gestures, and body movements. Nevertheless, prior research has demonstrated a high degree of concordance between emotional tone ratings derived from audio- and video-based assessments, and video data have not yielded substantially different findings despite offering additional non-verbal cues [42]. Thus, audio recordings can still effectively capture affective aspects of communication—both

verbal and paralinguistic—thereby contributing meaningfully to the analysis of emotional and relational dynamics.

Furthermore, the presence of a recording device may influence RNs' communication behaviours, potentially leading to more deliberate or structured interactions. However, previous studies suggest that such reactivity effects are generally minimal, particularly when recordings are conducted in naturalistic clinical settings and without researchers physically present [42].

Although this study is primarily descriptive, Table 6 presents comparisons across patient severity levels that may be affected by clustering at the RN level. With an ICC of 0.12, the assumption of independent observations is not fully met, and the observed differences may partly reflect between-RN variability rather than patient-level effects. As no clustering adjustment was performed, these results should be interpreted with caution.

To strengthen the study's reporting, the Equator network guidelines SCOBe research were followed [16]. Although this study was based on a relatively large sample of audio recordings, they were gathered in a specific Swedish context, which may limit generalisability to other contexts or countries.

9. Conclusion

Patient expressions of emotional distress were frequently elicited by the RNs, and RN responses more often provided space for further disclosure than reduced it and were more often explicit than non-explicit. The interactions were characterized by an active, supportive, and clear communication style in which RNs encourage patients to express emotional distress and facilitated more in-depth dialogue.

Practice implications

Encouraging recognition of emotional distress through active listening and an engaged communication approach, alongside awareness that its occurrence varies across clinical contexts, may enhance RN communication and optimise conditions to facilitate person-centred care. The findings further indicate that clinical practice should prioritise person-centred communication skills, promote supportive interactions, and integrate responsiveness to patients' emotional needs as a fundamental component of nursing care.

CRediT authorship contribution statement

Östman Malin: Writing – review & editing, Validation, Supervision, Funding acquisition, Formal analysis, Data curation. **Bergman Karin:** Writing – original draft, Formal analysis, Data curation. **Hedén Lena:** Writing – review & editing, Visualization, Supervision, Project administration, Methodology, Conceptualization. **Hallgren Jenny:** Writing – review & editing, Supervision. **van Dumlen Sandra:** Writing – review & editing, Methodology, Conceptualization. **J Sundler Annelie:** Writing – review & editing, Validation, Supervision, Project administration, Methodology, Formal analysis, Conceptualization.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT (OpenAI) and Microsoft 365 Co-Pilot to improve the linguistic quality of the manuscript. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

Funding sources

In addition to internal funding from the University of Borås, parts of this study were funded by FORTE, Swedish Research Council for Health, Working Life and Welfare, for Malin Östman's postdoc studies at Mälardalen University, grant number 2022-00850 (Awarded 25/05/2022).

Declaration of Competing Interest

At the time of this submission, Professor Sandra van Dulmen is serving as an Editorial Board Member at Patient Education and Counseling. We have no further financial support or relationship that may create a conflict of interest.

Acknowledgements

This study was conducted in collaboration with and supported by the infrastructure of the Swedish Research School in Integrated Care for Future Teachers (SHIFT CARE). The authors would like to thank Sofia Östensson for her assistance with data collection and the participating registered nurses and patients for their cooperation.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.pec.2026.109776.

References

[1] Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q 2005;83(3):457–502. https://doi.org/10.1111/j.1468-0009.2005.00409.x.
[2] Sundler AJ, Hedén L, Holmström IK, van Dulmen S, Bergman K, Östensson S, et al. The patient's first point of contact (PINPOINT) - protocol of a prospective multicenter study of communication and decision-making during patient assessments by primary care registered nurses. BMC Prim Care 2023;24(1):249. https://doi.org/10.1186/s12875-023-02208-0.
[3] Park H, Shin DS, Wade C, Duong DB. Scoping review of nurse triage in primary care. BMC Nurs 2025;24(1):1104. https://doi.org/10.1186/s12912-025-03740-3.
[4] Göransson M, Persson A-C, Abelsson A. Triage in primary healthcare. Nord J Nurs Res 2020;40(4):213–20. https://doi.org/10.1177/2057158520909451.
[5] Makoul G, Noble L, Gulbrandsen P, van Dulmen S, Consensus Working G. Reinforcing the humanity in healthcare: The Glasgow Consensus Statement on effective communication in clinical encounters. Patient Educ Couns 2024;122:108158. https://doi.org/10.1016/j.pec.2024.108158.
[6] Ekman I, Swedberg K, Taft C, Lindseth A, Norberg A, Brink E, et al. Person-centered care–ready for prime time. Eur J Cardiovasc Nurs 2011;10(4):248–51. https://doi.org/10.1016/j.ejcnurse.2011.06.008.
[7] Forsey J, Ng S, Rowland P, Freeman R, Li C, Woods NN. The Basic Science of Patient-Physician Communication: A Critical Scoping Review. S109–S18 Acad Med 2021;96(11S). https://doi.org/10.1097/ACM.0000000000004323.
[8] Drossman DA, Chang L, Deutsch JK, Ford AC, Halpert A, Kroenke K, et al. A review of the evidence and recommendations on communication skills and the patient-provider relationship: a rome foundation working team report. e7. Gastroenterology 2021;161(5):1670–88. https://doi.org/10.1053/j.gastro.2021.07.037.
[9] Höglander J, Holmström IK, Lövenmark A, Van Dulmen S, Eide H, Sundler AJ. Registered nurse-patient communication research: An integrative review for future directions in nursing research. J Adv Nurs 2023;79(2):539–62. https://doi.org/10.1111/jan.15548.
[10] Burt J, Lloyd C, Campbell J, Roland M, Abel G. Variations in GP–patient communication by ethnicity, age, and gender: evidence from a national primary care patient survey. Br J General Pract 2015.
[11] Ballering AV, Olde Hartman TC, Verheij R, Rosmalen JG. Sex and gender differences in primary care help-seeking for common somatic symptoms: a longitudinal study. Scand J Prim Health Care 2023;41(2):132–9.
[12] Al Shamsi H, Almutairi AG, Al Mashrafi S, Al Kalbani T. Implications of language barriers for healthcare: a systematic review. Oman Med J 2020;35(2):e122.
[13] Nerurkar L, van der Scheer I, Stevenson F. Engagement with emotional concerns in general practice: a thematic analysis of GP consultations. BJGP Open 2024;8(1). https://doi.org/10.3399/BJGPO.2023.0202.
[14] Merkebu J, M YS, Loncharich M, Hawks MK, Costello JA, Shapiro M, et al. Emotions and Clinical Reasoning in Medical Education and Clinical Practice: A Scoping Review. Acad Med 2025;100(11):e80–90. https://doi.org/10.1097/ACM.0000000000006182.
[15] Gossi F, Arpagaus A, Gross S, Zumbrunn SK, Bissmann B, Hunziker S, et al. Physician responses to patients' emotional cues and concerns and their association with patient-related outcomes. Patient Educ Couns 2026;142:109386. https://doi.org/10.1016/j.pec.2025.109386.
[16] Hillen MA, Hoeben EM, Kok R, McHale C, Sexton MM, van der Asdonk S, et al. Guidelines for reporting research using systematic coding of observed human

behaviour (SCOBe). Qual & Quant 2024;59(S1):587–603. https://doi.org/10.1007/s11135-024-01969-9.
[17] International Council of Nurses. Guidelines on Advanced Practice Nursing Geneva: ICN.2020 [Available from: https://www.icn.ch/system/files/documents/2020-04/ICN_APN%20Report_EN_WEB.pdf.
[18] Rudebeck CE. Relationship based care - how general practice developed and why it is undermined within contemporary healthcare systems. Scand J Prim Health Care 2019;37(3):335–44. https://doi.org/10.1080/02813432.2019.1639909.
[19] Del Piccolo L, de Haes H, Heaven C, Jansen J, Verheul W, Bensing J, et al. Development of the Verona coding definitions of emotional sequences to code health providers' responses (VR-CoDES-P) to patient cues and concerns. Patient Educ Couns 2011;82(2):149–55. https://doi.org/10.1016/j.pec.2010.02.024.
[20] Del Piccolo L, Finset A, Mellblom AV, Figueiredo-Braga M, Korsvold L, Zhou Y, et al. Verona Coding Definitions of Emotional Sequences (VR-CoDES): Conceptual framework and future directions. Patient Educ Couns 2017;100(12):2303–11. https://doi.org/10.1016/j.pec.2017.06.026.
[21] Zimmermann C, Del Piccolo L, Bensing J, Bergvik S, De Haes H, Eide H, et al. Coding patient emotional cues and concerns in medical consultations: the Verona coding definitions of emotional sequences (VR-CoDES). Patient Educ Couns 2011;82(2):141–8. https://doi.org/10.1016/j.pec.2010.03.017.
[22] Parker D, Byng R, Dickens C, McCabe R. Patients' experiences of seeking help for emotional concerns in primary care: doctor as drug, detective and collaborator. BMC Fam Pract 2020;21(1):35. https://doi.org/10.1186/s12875-020-01106-z.
[23] Butalid L, Verhaak PF, van Dulmen S, Bensing JM. Concerns voiced by patients and GPs' responses during psychosocial visits in primary care: a historical cross-sectional study. BMC Fam Pract 2014;15(1):188. https://doi.org/10.1186/s12875-014-0188-3.
[24] Schouten BC, Schinkel S. Emotions in primary care: Are there cultural differences in the expression of cues and concerns? Patient Educ Couns 2015;98(11):1346–51. https://doi.org/10.1016/j.pec.2015.05.018.
[25] Cherry MG, Fletcher I, Berridge D, O'Sullivan H. Do doctors' attachment styles and emotional intelligence influence patients' emotional expressions in primary care consultations? An exploratory study using multilevel analysis. Patient Educ Couns 2018;101(4):659–64. https://doi.org/10.1016/j.pec.2017.10.017.
[26] Griep EC, Noordman J, van Dulmen S. Practice nurses mental health provide space to patients to discuss unpleasant emotions. J Psychiatr Ment Health Nurs 2016;23(2):77–85. https://doi.org/10.1111/jpm.12279.
[27] Heyn LG, Brembo EA, Eide H, Hafskjold L, Sundling V. Older persons' expressed worries during nursing care at home: Do health complexity and nature of nursing care in the visit matter? Patient Educ Couns 2021;104(10):2418–24. https://doi.org/10.1016/j.pec.2021.07.019.
[28] Sundler AJ, Höglander J, Eklund JH, Eide H, Holmström IK. Older persons' expressions of emotional cues and concerns during home care visits. Application of the Verona coding definitions of emotional sequences (VR-CoDES) in home care. Patient Educ Couns 2017;100(2):276–82. https://doi.org/10.1016/j.pec.2016.09.009.
[29] Höglander J, Eklund JH, Eide H, Holmström IK, Sundler AJ. Registered Nurses' and nurse assistants' responses to older persons' expressions of emotional needs in home care. J Adv Nurs 2017;73(12):2923–32. https://doi.org/10.1111/jan.13356.
[30] Kleye I, Sundler AJ, Darcy L, Karlsson K, Hedén L. Children's communication of emotional cues and concerns during a preoperative needle procedure. Patient Educ Couns 2022;105(6):1518–23. https://doi.org/10.1016/j.pec.2021.09.035.
[31] Oguchi M, Jansen J, Butow P, Colagiuri B, Divine R, Dhillon H. Measuring the impact of nurse cue-response behaviour on cancer patients' emotional cues. Patient Educ Couns 2011;82(2):163–8. https://doi.org/10.1016/j.pec.2010.04.006.
[32] Finset A, Heyn L, Ruland C. Patterns in clinicians' responses to patient emotion in cancer care. Patient Educ Couns 2013;93(1):80–5. https://doi.org/10.1016/j.pec.2013.04.023.
[33] Riley R, Weiss MC, Platt J, Taylor G, Horrocks S, Taylor A. A comparison of GP, pharmacist and nurse prescriber responses to patients' emotional cues and concerns in primary care consultations. Patient Educ Couns 2013;91(1):65–71. https://doi.org/10.1016/j.pec.2012.11.009.
[34] Östensson S, Acuna Mora M, Darcy L, Saarnio Huttu L, Van Dulmen S, Sundler AJ. Patient-Registered Nurse Communication: Exploring Patients' Expectations and Experience in Primary Care Consultations. Health Expect 2025;28(4):e70353. https://doi.org/10.1111/hex.70353.
[35] Zimmermann C, Del Piccolo L, Finset A. Cues and concerns by patients in medical consultations: a literature review. Psychol Bull 2007;133(3):438–63. https://doi.org/10.1037/0033-2909.133.3.438.
[36] Romeiro FB, Pais VG, Humphris G, Figueiredo-Braga M. Patients' emotional expressions and clinicians' responses in oncology–From recognition to exploration of concerns. PEC Innov 2025;6:100374. https://doi.org/10.1016/j.pecinn.2025.100374.
[37] Bergman K., Sundler A.J., van Dulmen S., Östman M., Hallgren J., Hedén L. Addressing Routine Health Needs in Registered Nurse–Led Primary Care Consultations: A Cross-sectional Study. In manuscript.
[38] Peterson MC, Holbrook JH, Von Hales D, Smith NL, Staker LV. Contributions of the history, physical examination, and laboratory investigation in making medical diagnoses. West J Med 1992;156(2):163–5.
[39] Håkansson JE, Holmström IK, Kumlin T, Kaminsky E, Skoglund K, Höglander J, et al. Same same or different?" A review of reviews of person-centered and patient-centered care. Patient Educ Couns 2019;102(1):3–11. https://doi.org/10.1016/j.pec.2018.08.029.
[40] Salmon J. Using observational methods in nursing research. Nurs Stand 2015;29(45):36–41. https://doi.org/10.7748/ns.29.45.36.e8721.
[41] Eide H, Eide T, Rustøen T, Finset A. Patient validation of cues and concerns identified according to Verona coding definitions of emotional sequences (VR-CoDES): a video-and interview-based approach. Patient Educ Couns 2011;82(2):156–62. https://doi.org/10.1016/j.pec.2010.04.036.
[42] Williams K, Herman R, Bontempo D. Comparing audio and video data for rating communication. West J Nurs Res 2013;35(8):1060–73. https://doi.org/10.1177/0193945913484813.