Title: Communication patterns in nurse-led chemotherapy clinics: <u>A mixed-method study</u>

Carole Farrell[a,1], E Angela Chan[b], Eleni Siouta[c], Catherine Walshe[d], Alex Molassiotis[b].

[a] The Christie NHS FT, Withington, Manchester, UK

[b] School of Nursing, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HKSAR

[c] Nursing Department, Sophiahemmet University College, Sweden

[d] Department of Health Research, Lancaster University, UK

Corresponding author:

<u>Carole Farrell</u>[,1], PhD, MPhil, MSc, MA, RGN

Faculty of health & Wellbeing, University of Bolton, Greater Manchester, UK
Tel: +44(0) 1204 903978
Email: C.farrell2@bolton.ac.uk

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[1] Present address: Faculty of Health & Wellbeing, University of Bolton, Greater Manchester, UK.
C.farrell2@bolton.ac.uk

Abstract

Objective: To determine patterns of nurse-patient communication in fulfilling patients' informational/psychosocial needs, effects of longer consultation/operational aspects on person-centred care experiences.

Methods: Mixed-method design; secondary analysis of transcripts of nurse-patient communication within nurse-led chemotherapy clinics in UK [3]. Purposive sampling (13 nurses); non-participant observations (61 consultations). Qualitative content analysis of audio-recorded transcripts. Quantitative analysis using the Medical Interview Aural Rating Scale[14] to compare mean differences in the number of cues and level of responding using one-way ANOVA, and correlational analyses of discursive spaces.

Results: Nurses responded positively to informational cues, but not psychosocial cues. Longer consultations associated with more informational and psychosocial cues ($p < .0001$), but not nurses' cue-responding behaviours. Four main themes emerged: challenges/opportunities for person-centred communication in biomedical contexts; patients' "life world" versus the "medical world"; three-way communication: nurse, patient and family; implications of continuity of care.

Conclusions: The challenges/opportunities for cue-responding in nurse-led chemotherapy clinics were evident for informational and psychosocial support of patients. Shifting from a biomedical to biopsychosocial focus is difficult.

Practice implications: Further evaluation is needed to integrate biopsychosocial elements into communication education/training. Careful planning is required to ensure continuity and effective use of time for person-centred care.

Keywords

1. Introduction

Given the often unmet psychosocial needs of cancer patients and the pressure on capacity and resources, nurse-led clinics were developed to improve the delivery and continuity of care for patients with cancer [1]. Continuity of care is often referred to in the literature as three constructs with distinct emphases:

1. Relational continuity (therapeutic alliances between patients and healthcare professionals who have accumulated comprehensive knowledge on the patients)

2. Informational continuity (appropriate care based on referring to the patient's information from past events)

3. Management continuity (the timely coordination of care between different healthcare professionals) [2].

The intention is to devote more time for patients than is possible with traditional cancer care models [3]. Evidence on nurse-led clinics indicates they deliver high patient satisfaction [4]. Patients find it easier to approach and form good relationships with nurses than with doctors [5]. Often, this reflects how nurses attend to patients' health conditions within individual patient's personal and sociocultural context (lifeworld discourse) [6]. However, patients' experiences in nurse-led clinics in terms of this lifeworld discourse is a neglected area of research. Although nurse-led clinics have aimed to improve cancer patients' experiences by providing longer consultations, this has not improved psychosocial care [7].

Patients needing emotional support often express their needs implicitly through cues. Therefore nurses' ability to recognize and respond to patients' cues and concerns would address patients' psychosocial needs irrespective of the duration of consultations. Zimmermann et al [8] defines a concern as *"a clear and unambiguous expression of an unpleasant current or recent emotion that is explicitly verbalized with or without a stated issue of importance"; c*ues are described as verbal or non-verbal hints to underlying concerns, which require further exploration to identify the actual concern [8]. Many studies on communication frameworks focus on cue-responding behaviours, indicating the effectiveness of nurse-patient communication in oncology relies on addressing patients' psychosocial needs [9,10]. Patients often prefer to express emotional concerns to nurses [11], therefore nurses in nurse-led chemotherapy clinics should provide good psychosocial care. However, evidence indicates that nurses may lack the ability and sensitivity to address patients' psychosocial needs [12]. Other cue-responding studies have shown that nurses use blocking behaviours 55-75% of the time, even when patients explicitly expressed concerns [9], which discourages patients from expressing concerns. The missing or avoidance of cues/concerns by nurses may cause psychosocial distress for patients with

cancer if their needs are not addressed [13]. No studies have been identified to date focusing on the process of nurse-patient communication in nurse-led chemotherapy clinics using a framework of cue-responding behaviours.

2. Methods

Ethical approval for this study was obtained from NHS Research Ethics Committee (REC: reference 11/NW/0240), the four hospitals in England involved, and the University of Manchester.

2.1 Aims

This study aimed to determine the patterns of nurse-patient communication in fulfilling patients' informational / psychosocial needs, and effects of longer consultation/operational aspects on person-centred care experiences. This study may inform the interplay between longer consultations and operational aspects of patients' experiences of person-centred care. The research questions are:

- What are the patterns of nurse-patient communication, through cue-responding behaviours, in nurse-led chemotherapy clinics?
- What are the challenges and opportunities for nurse-patient communication in such clinics?

2.2 Research design, sample and settings

This study uses a mixed-method design, incorporating secondary analysis based on transcripts of oral nurse-patient communication within four UK nurse-led chemotherapy clinics [3], aimed at exploring nurses' roles and autonomy. Methods included purposive sampling of 13 nurses and non-participant observations of 61 nurse-patient consultations over six months. In some consultation other family members were also present. The duration of consultations ranged from 3-60 minutes (mean 17.30, *SD* = 12.63). The duration of consultations were further clustered based on their percentiles: short session (<25th), medium session (25th – 75th), and long session (>75th).

2.3 Data collection

Qualitative content analysis was undertaken of audio-recorded transcripts from nurse-patient consultations. Transcripts were coded using the Medical Interview Aural Rating Scale (MIARS) [14], resulting in quantitative data. The MIARS scale was developed from Bandura's social cognitive learning theory [15], Hobson's conversational model of psychotherapy [16], and research on cues [17]. Quantitative analysis, drawing on Heaven & Green's MAIRS [14] was used to compare mean differences in the number of cues and level of responding using one-way ANOVA, and correlational analyses of discursive spaces.

Cue-responding analysis reflects the sequences of patients' cue emissions and nurses' responses. MIARS was specifically developed for oncology settings [18], and has been widely used [9]. In MIARS 'a turn' represents the basic unit of observation: what one person says before another speaks. It is coded for both patient and nurse. Interrater reliability was calculated by two coders on 50% of transcribed consultations (n=30), with 85% agreement. This is considered to be good agreement [19].

Patients' cues were coded at different levels:

1) Level 1: Hints of worry and concern
2) Level 2: Direct expressions of worry and concern
3) Level 3: Clear expressions of intense emotions (e.g., crying).

Nurses' responses were coded positively (exploration, acknowledgment to facilitate the communication) or negatively (distancing or blocking behaviours to prohibit further communication).

The level of nurses' cue-responding behaviours was computed by:

$$\frac{number\ of\ positive\ behaviors - number\ of\ negative\ behaviors}{number\ of\ turns}$$

A number higher than 0 indicates more positive behaviours, therefore higher competency with nurse-patient communication. Heaven and Green (2001) [14] demonstrated reliability of MIARS, with high intra-class correlation coefficients for acknowledgments (r = .71; 95% CI = 0.60-0.82), explorations (r = .77; 95% CI = 0.67-0.86), and distancing behaviours (r = .71; 95% CI = 0.59-0.82).

2.4 Analysis

Qualitative data were managed by atlas TI[TM] and analysed through content analysis [20] to extract themes. Numerical data were analysed using IBM SPSS[TM] with descriptive and inferential statistics. Descriptive statistics provided an overview of nurses' cue-responding behaviours in relation to patients' informational and psychosocial needs.

A descriptive analysis of discursive spaces was also undertaken [20], which considers the frequency of words used by participants during consultations [6], indicating how participants shared the available discursive space. Analysing discursive spaces is one way of understanding patients' ability to make their voices heard by telling professionals about their everyday lives within medical consultations. We included cues elicited when topics were brought up by patients and also by nurses, to provide a comprehensive account of the whole communication process.

Inferential statistics included analysis of variances (ANOVA) to compare mean differences in nurses' level of cue-responding across clinics, mean differences in the number of cues and level of cue-responding between nurse consultations of different durations, and also correlational analyses of

discursive spaces between nurses, patients, and family members ($p<.05$ was considered statistically significant).

3. Results

Thirteen nurses were observed in nurse-led chemotherapy clinics: three advanced nurse practitioners, two nurse consultants, and eight chemotherapy nurses. All had received training in clinical examination skills, non-medical prescribing and advanced communication skills.

3.1 Quantitative results

The overall pattern of nurses' cue-responding behaviours to informational and psychosocial cues emerged clearly for patients and their family (Table 1). More positive responses (83%) to informational cues were observed, indicating a higher level of cue-responding (*mean* = .66, *SD* = .31). However, more negative responses (63%) were observed for psychosocial cues, identifying a lower level of cue-responding (*mean* = -.34, *SD* = .53). Results from ANOVA did not suggest any significant mean differences in nurses' cue-responding levels across different nurse-led clinics: informational (varied between 0.53 and 0.71), psychosocial (between -0.13 and 0.47).

The duration of nurse-patient consultations varied: short sessions (range 5.33- 8.66 minutes), medium sessions (range 8.67-21.46 minutes), and long sessions (range 21.47- 54.16 minutes). ANOVA results (Table 2) did not indicate significant differences in nurses' level of cue-responding amongst the three categories of session length. Therefore, longer consultations did not appear to influence positive/negative cue responses. However, there were significant differences in the number of cues expressed within different consultation durations, which may indicate that longer consultations allow patients/families to express more cues, or nurses may spend more time with patients/families who express more cues.

Correlational analyses of the distribution of discursive spaces suggested moderate positive correlations for the word count of patients and their family ($r(36)$ = .58, 95% CI = .31-.76, $p < .01$), nurses and the patients' family ($r(36)$ = .45, 95% CI = .15-.67 $p < .01$), and also patients and nurses ($r(58)$ = .48, 95% CI = .26-.66, $p < .01$). This suggests that larger occupation of discursive spaces by nurses or the patients' family did not appear to inhibit patient involvement.

3.2 Qualitative results

This qualitative analysis is an external interpretation of cues and the purpose of communication. Reference to the patients' lifeworld is a potential explanation for observed behaviour, indicating power relationships between patients and health professionals during consultations. The 'lifeworld voice' localizes problems within the patient's personal and sociocultural contexts (ideas, concerns,

expectations, feelings, thoughts, effects, understanding and unique experience of illness) [21]. The 'medicine voice' frames these problems within the technical biomedical model and focusses on symptoms, signs, aetiology, investigations, underlying pathology and the treatment of specific diseases [21]. The data indicates that consideration of the dominance of professionals' biomedical voices and patients' predispositions to place their experiences of illness into their lifeworld (patients' everyday life) is important. In the data the voice of medicine dominated the conversations, while the patients' voice (from their lifeworld) was often not listened to, or ignored, in nurse-patient consultations.

Four themes emerged from the data:

1. Person-centred nurse-patient communication through cue-responding
2. The patient's "life world" versus "medical world"
3. Three-way communication: nurses, patients, and their family
4. Relational, informational, and continuity of care

Abbreviations were used to identify different voices: N(nurse), P(patient), W(wife), H(husband), D(daughter).

3.2.1 Theme 1: Person-centred nurse-patient communication through cue-responding

Time constraints

Although nurse-led clinics aimed to offer longer consultations, packed schedules created a task-oriented focus for some nurses, especially advanced nurse practitioners (ANP). Observations showed they frequently viewed the computer screen with minimal eye contact during consultations [3]. For example, given time pressures, one nurse had to prioritize the "medical world," and failed to explore how pain interfered with the patient's life.

The use of closed questions and quick interruption to gather 'essential' information conveyed a sense of hurry and prevented the patient from discussing her psychosocial needs, as the nurse did not acknowledge and explore the cue "not this again".

Communication assumptions

Similarly, a nurse's assumption of patients' concerns as common side-effects and prioritization of the medical world hindered her from offering psychosocial support. This resulted in an incomplete exploration of how symptoms may interfere with patients' daily activities.

In addition to making assumptions when responding to the patient's cue, the nurse's ambiguous comments and standardized answers on variability of side-effects may not provide psychological

comfort. The nurse directed the conversation to another potential side-effect without addressing the potential anxieties of the patient and her husband.

Patient anxiety of side-effects

Patients and families were often anxious when briefed about potential side-effects. Some nurses missed patients' anxieties, as expressed through cues and concerns, however others demonstrated positive cue-responding behaviours.

3.2.2 Theme 2: The patient's "life world" versus "medical world"

For many patients, waiting for scan results can induce anxiety, uncertainty and feeling of lack of control over results and subsequent treatment decisions. Long treatment sessions may interfere with patients' daily life and create concerns. Acknowledging this, the nurse suggested booking the appointment. However, missed an opportunity to provide emotional support to reduce the potential psychological impact.

Nurses' positive roles in psychosocial care

Information provision by nurses enable patients to know what to expect from complex treatment logistics and modalities, which could reduce their anxiety. In addition to information provision, another patient relied on the nurse to respond to her need for normalcy in her life. Although it would seem a minor task to rearrange the treatment schedule, the nurse's support in responding to the patient's concern may reduce psychological distress.

This depicts how the nurse's priority was the "medical world" to benefit the patient (attending treatment as scheduled), which conflicted with the patient's focus on the "life world" (not letting treatment interfere with car trading, since this might enable him to maintain control). However, the nurse did not support the patient's psychosocial needs, which seemed as important as his medical needs. The quality of psychosocial care could be improved, which relies on nurses' sensitivity and empathy.

3.2.3 Theme 3: Three-way communication: nurses, patients, and their family

A family member can play many roles throughout the patient's treatment, such as raising concerns the patient may fail to express. This illustrates how the patient's wife helped him to articulate his worries about choking during radiotherapy, which provided an opportunity for the nurse to offer psychological support, but although the nurse reassured the patient that he wouldn't choke and explained safety procedures during treatment, she could have discussed this further with greater empathy.

The second example illustrates how the conversation can shift from the patient to the family. When the patient's daughter asked about the patient's progress, the nurse failed to check whether the patient's understanding and consent for this information to be given. The nurse's use of medical jargon and false reassurances also failed to comfort the patient and her daughter.

3.2.4 Theme 4: Relational, informational and continuity of care

Continuity of care was important to patients/family, since it was common for patients to feel insecure given treatment uncertainties. The relational continuity of care from seeing the same nurse could ease patients' insecurities by offering familiarity and consistency.

Most nurses generally displayed good quality relational care, viewing the patient as a "person." The casual opening about the patient's hairstyle and holiday trip also eased anxiety without causing the patient to feel overwhelmed by the "medical world" at the beginning of the consultation. Having the same patients and nurses throughout the treatment could enhance informational continuity of care. Many nurses observed followed-up on patients' initial concerns, which facilitated time-efficient consultations. Continuity also ensures coherent care across healthcare providers, since nurses can bridge communication between patients/families and different healthcare providers. However, the second example indicates fragmented continuity of care.

This fragmentation caused the patient to feel disappointed about communication breakdown between the nurse and consultant, and anxious about the results of his scan and treatment decisions. The nurse hoped the scan could be done in her hospital to save time chasing the results. However, this also indicates a potential imbalance of power between medical consultants and nurses in nurse-led chemotherapy clinics, which may adversely affect the continuity and quality of care.

4. Discussion and conclusion

4.1 Discussion

Nurses in this study were generally effective at responding to informational cues, but less effective in addressing psychosocial cues. There were missed opportunities to offer patients psychosocial support through effective cue-responding, which concurs with findings from de Leeuw et al. [12]. However, patients showed appreciation when nurses gave information or support to maintain the normalcy of their lives, therefore were clearly responsive to cue-responding behaviour. Maintaining normalcy of patients' daily lives could be an opportunity for nurses to offer person-centred care; however, nurses often lacked sensitivity and focused mainly on medical-technical aspects of chemotherapy and logistics, including appointments. While these aspects are important to reduce uncertainty anxieties,

less attention was placed on emotional aspects of patients' hopes, fears, and home circumstances, which are equally important.

The example of a nurse's failure to relieve the patient's anxiety when discussing potential side-effects highlights the complexity of effective cue-responding. Emotional meanings could be embedded in informational cues, therefore cue-responding is important for informational cues [10]. Instead of giving standard/ambiguous comments regarding the individual variability of potential side-effects, nurses could tailor information to offer psychological comfort. Considering the patients' medical world versus their life world, Uitterhoeve et al [23] asserted that patients' reality often lies in present experiences; patients perceive treatment as a source of hope and chance for a future, which often creates anxiety; health professionals tend to emphasize the contents of treatments that patients should remember. Cue responses such as providing possible explanations for why patients need to wait [22], and giving patients' information about what to expect [2], would be useful to relieve anxiety.

In contrast with the findings of de Leeuw et al. [12], where patients expressed more level 1 cues which were subtle, our patients expressed more direct level 2 cues. This may be partly due to informational cues, which often include direct questions, but may also relate to nurses' good relational and informational continuity of care. Nonetheless, further studies are warranted to unpack factors that may contribute to patients' expression of direct cues. Although the nature of level 2 cues were more explicit, nurses in this study were often observed to respond poorly to patients' cues. However, the potential limitations of coding and analysis from transcripts rather than video/audio recordings should also be noted.

As in other contexts of nurse-patient communication [25], our qualitative enquires revealed how the influencing contextual factor of a packed schedule and time constraints, could hamper the quality of nurses' psychosocial care through cue-responding. Multitasking and focusing on computer screens may convey an indifferent attitude [26], which could prevent patients from making subsequent disclosures. Therefore, a priority is to consider how nurses can effectively incorporate nursing values and person-centred care instead of replicating tasks within traditional biomedical models, given that nurse-led models were established to mitigate contemporary health issues. Nevertheless, there is a clear need to improve management plans and capacity issues given their impact on patients' psychosocial wellbeing. Whilst longer consultations were associated with more cues, it is difficult to know whether they simply allowed patients to express more cues, or whether nurses spent more time with patients who expressed more cues. This warrants further exploration.

It is important to note that effective cue-responding goes beyond the mere availability of time. Our findings suggest that other contextual influencing factors, especially those relating to traditional biomedical models [27], hindered nurses' ability to respond effectively to cues and provide psychosocial care. Despite differences in nurses' scope of practice and operational models of nurse-led chemotherapy clinics [3], all nurses in this study greatly subscribed to the traditional biomedical model. Heaven et al. [28] also noted institutional barriers to effective nurse-patient communication in other contexts, promoting a culture of task-oriented care. Indeed, many guidelines/protocols in nurse-led chemotherapy clinics were written by medical consultants, and emphasised the provision of physical care over psychosocial care [3]. Evidently, we observed nurses' pattern of care in following the medical script [28]. Although this may improve time management, it creates inflexibility which can result in failure to respond to patients' cues in a timely manner.

The turn-taking system [23] revealed nurses' sequential dominance, regarded as 'reducing space' behaviours [12]. This was more prominent when time-pressed nurses kept interrupting patients to focus on the "medical world," which prevented further cue disclosure. The medicalization of nurses' roles, such as using written checklists to record chemotherapy toxicities [3], also made nurses prone to neglecting patients' psychosocial cues. This is demonstrated by nurses' prioritization of the "medical world", which appears to prevent them from exploring patients' cues due to false assumptions they were common side-effects of treatment, which resulted in failure to identify patient's psychosocial needs. To address this within nurse-led chemotherapy clinics, it is important to promote attitudinal changes and value person-centred care [10] within the context of a biomedical focus, and support nurses provision of psychosocial care through effective cue-responding.

Similar to Tay et al. [31], our study revealed no differences in cue-responding between ANPs and chemotherapy nurses, despite their professional differences. Our findings indicated that nurses often failed to respond to patients' psychosocial cues, which may result in unmet needs. This is worrying since all nurse participants reported completing advanced communication skills training. Evidence suggests that effective cue-responding can be learnt [9], however to what extent communication skills are maintained over time is unknown. Additional factors may also impact nurse-patient communication within nurse-led chemotherapy clinics [31], including the physical environment, organisational culture, and operational factors [3], which indicates the need for further research. Additional communication/consultation skills may also be required to facilitate more effective patient-centred consultations.

The structure of nurse-led initiatives that enable a nurse to follow up the same patients increases relational and informational continuity [31]. The nurse who provided good relational continuity by

casually asking about changes to the patient's hair appeared less overwhelming for the patient than providing medical information at the outset of the consultation. Similarly, it is helpful when nurses demonstrate informational continuity by following up on patients' initial concerns. Unfortunately, fragmented management continuity was also observed where communication broke down between nurse and consultant over patients' scan results, which reflects findings in other contexts [2]. In this study, all patient referrals were controlled by medical consultants, creating power imbalances and inconsistent referrals in some hospital settings [2]. Further research is needed to examine complex operational factors and balance of power in nurse-led initiatives to enhance patients' continuity of care.

Regarding family involvement, our quantitative findings suggest that patients did not appear passive in the presence of a family member. However, this type of analysis does not account for contextual factors within communication process; our qualitative example revealed how the nurse shifted attention from the patient to her daughter, inhibiting the patient from voicing her needs. It is important for nurses to consider both patients' and their families' needs within consultations to maximize psychosocial support. Further research is needed to increase understanding of complexities within family dynamics [12], and prepare nurses to effectively manage three-way communications in nurse-led chemotherapy clinics.

4.2 Conclusion

The challenges and opportunities of cue-responding for person-centred care were evident in nurse-led chemotherapy clinics, and patients valued nurses' informational and psychosocial support. Unfortunately, the slow realization of biopsychosocial models of care hindered nurses' effectiveness in providing psychosocial care through cue-responding. There is an urgent need for nurses to re-evaluate the provision of psychosocial care within biomedical contexts of nurse-led clinics. Given the influencing contextual factors of cue-responding such as time constraints, the need to improve capacity issues also became clear. The application of effective communication skills training seemed limited in some nurse-led chemotherapy clinics, and reasons for this require further exploration. It may be useful to explore how to enable nurses to effectively incorporate biomedical elements alongside exploring patients' psychosocial needs/concerns. Longitudinal follow-up of implementation in practice may also reinforce nursing values through effective cue-responding for patients/family within nurse-led chemotherapy clinics. This aspect of training is important, since better psychosocial care extends beyond the mere availability of time. Continuity of care could promote better nurse-patient communication, which may facilitate patients' disclosure of cues. Careful planning and

management initiatives are also required to enhance effective collaboration within the multidisciplinary team to strengthen operational management and promote continuity of care.

4.3 Practice implications

Although nurse-led clinics have aimed to improve cancer patients' experiences by providing longer consultations, this has not improved psychosocial care. This study identified that nurses were generally effective in responding to informational cues, but less effective in addressing psychosocial cues. It is important to ensure that greater emphasis is placed on incorporating nursing values and person-centred care within biomedical settings and nurse-led clinics.

Statement

I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

[3839 words]

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