

Health Communication Expertise in Encounters Involving Medical Technologies

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Abstract Involvement of medical technologies in healthcare encounters calls for a critical analysis of the communicative expertise of healthcare personnel dealing with the technology while communicating with patients. This paper explores how a discourse analytic approach, activity analysis, is fruitful when identifying what characterizes human interaction involving medical technologies. The paper suggests that healthcare professionals can cultivate their awareness about their communicative expertise in relation to medical technologies in professional encounters.

Keywords. Health communication, communicative strategies, communicative expertise, activity analysis, activity type, discourse type, online commentaries, offline commentaries, metacommentaries, obstetric ultrasound technology, medical technologies, ethnography

1 Introduction

Medical technologies are increasingly applied in modern healthcare worldwide. The use of medical technologies in healthcare encounters challenges the communication between the healthcare professional and the patient, since the attention of the healthcare professional must be divided between the technology and the patient. Healthcare professionals juggle between paying attention to the patient and conveying technology-mediated information in the situated health encounter.

Healthcare is constituted by communicative practices, such as talk (e.g. doctor-patient talk, healthcare professionals knowledge exchange), text (e.g. discharge summaries, letters), and use of designated tools and technologies (e.g. x-ray, blood pressure). Health communication practices are exchanged, developed and negotiated in the social context, between participants with different roles and responsibilities. Novices must socialise into the particular community of practice [15] in order to understand the procedures and the tacit knowledge relevant to the practices. This socialisation process includes learning the rules and norms of the communication, or what Wittgenstein [16] calls the “language game”. In healthcare, where communication with the patients is a fundamental part of the professional practice, it is especially

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important with an awareness of communication practices and communicative expertise. Communicative expertise is important for maintaining relational and ethical proprieties in healthcare encounters involving medical technologies (hereafter called med-tech-encounters) [1].

An ethnographic case study of health communication in obstetric ultrasound encounters involving advanced midwives and pregnant women in rural hospitals in KwaZulu-Natal, South Africa, is the point of departure for discussing communication in med-tech-encounter.

The objective of this paper is to identify typical patterns in the communication between advanced midwives and pregnant women during obstetric ultrasound encounters. The theoretical and analytical approach is activity analysis, as developed by Sarangi [10].

2 Activity Analysis

Activity Analysis is a discourse analytic approach that focuses on characteristics of the activity type as crucial for human communication. Activity analysis includes the following dimensions: mapping of entire encounters at structural, interactional and thematic levels, communicative flexibility in terms of activity types and discourse/interaction types, integration of discursal and rhetorical devices, Goffman's notions of frame, footing and facework, Gumperz's notions of contextualisation cues and conversational inference, alignment: sequential and normative, social and discourse role-relations, and thick participation and thick description [10].

Relevant in this paper are the mapping of the encounter in structural and interactional levels, and the notions of activity types and discourse/interaction types. Let us start with the latter.

The term *activity type* was introduced by Levinson [17], and can be considered an abstract situation description. The activity type is situated activity where the members have mutual goals, and where the social and the institutional setting conditions and puts some constraints on the participants and on the communicative contributions [4]. Examples of activity types are football matches or general practitioners encounters. A *discourse type* is a communicative component in the activity type, and is a way of characterizing forms of talk, for example promotional talk, interrogation and troubles telling [7], questions and answers sequences, reporting, reformulations and so on [9]. In this paper, relevant discourse types are: *online commentaries*, which report immediate observations [5], *offline commentaries*, which are reporting facts and explanations [1] and *metacommentaries*, which are prospective or retrospective commentaries framing the activity [12, 13, 14]. (See [19] for illustrative examples).

The purpose of conducting a *structural mapping* [6,10] of the encounter is to identify the overall structure of how the actions and tasks are organized in an activity type. Gilstad [1] showed that obstetric ultrasound encounters have the following structural pattern:

Phase I: pre-examination

Sub-phases:

- Initial greeting,

- (Informed consent)
- Presentations of the participants of the encounter

Phase II: physical examination

Sub-phases:

- Preparatory routine
- Examination of the maternal anatomy and the uterus
- Examination of the anatomy of the foetus
- Measurements

Phase III: post-examination phase

- Sub-phases:
- Talk about delivery
- Summary of findings and farewell

A structural mapping of the encounter enables us to scrutinize and understand what is happening at what time and for what purpose during the encounter. Structural analysis of encounters of the same activity type enables us to distinguish typical patterns that characterize the particular activity type, and informs about when procedures and practices are most likely to occur.

The purpose of the *interactional mapping* [6,10] is to identify the distribution of turns between the participants during the encounter. A turn can be defined as a non-interrupted communicative contribution in a turn-taking sequence, lasting from one-word response to a long monologue. Below is an example of an interactional mapping from a typical encounter in obstetric ultrasound [1]:

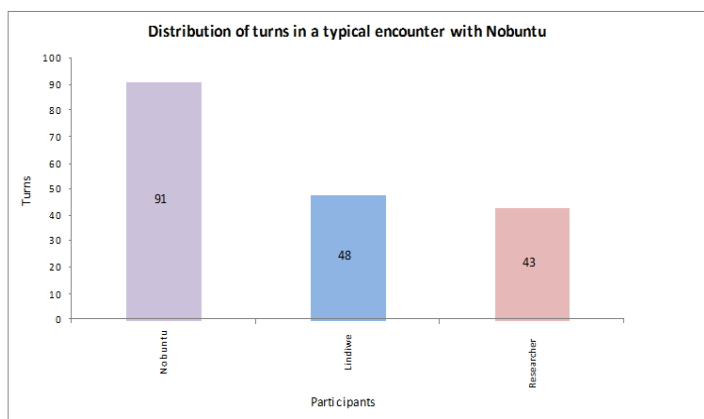


Fig. 1 Distribution of turns in a typical encounter with advanced midwife Nobuntu.

The distribution of turns may indicate tendencies in who contributes, but does not indicate the volume in each contribution. In order to grasp the tendencies as to who of the participants are dominating in terms of much and little talk, we can conduct a word count of each turn:

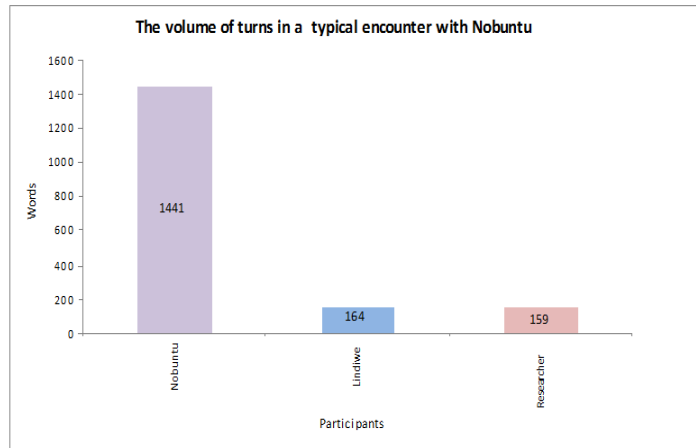


Fig. 2 The volume of turns measured in a word count in a typical encounter with advanced midwife Nobuntu.

The interactional mapping does not reveal power relations, but can show tendencies as to who contributes communicatively. As we see in the Figures 1 and 2 above, advanced midwife Nobuntu is most active in the interaction. Pregnant woman Lindiwe is more active than the researcher in terms of turns, but the word count reveals that they express an equal amount of words. This kind of interactional mapping enables us to quantify the communicative contributions. However, in order to come to an understanding about the content of the communicative contributions, we must do a more thorough interactional analysis of the communication. An interactional analysis of an excerpt from an obstetric ultrasound conversation is conducted in the analysis section of the paper.

3 Methodology

The case study [1] included thirteen video recorded obstetric ultrasound encounters of three advanced midwives and 13 pregnant women from three rural hospitals in KwaZulu-Natal, South Africa. The encounters comprised a midwife, a pregnant woman and a researcher. The communication was in English and in Zulu, and the midwife switched code between the two languages. The video recordings were transcribed according to the transcription conventions for verbal communication from [3] and the transcription conventions for non-verbal communication from [2]. The communication study represents a part of an umbrella project aiming at teaching and training obstetric ultrasound to advanced midwives in rural hospitals in KwaZulu-Natal [18]. The communication study was motivated by a desire to understand the identified communicative challenges of knowledge exchange in the multicultural educational setting [1].

4 Analysis

In order to distinguish what characterises the communicative expertise of healthcare professionals, we need to analyse what is communicated, for what purpose and with what communicative strategies during the conversation. I will consider a ‘normal’ scenario from the obstetric ultrasound encounters and analyse how different discourse types (online commentaries, offline commentaries and metacommentaries) are configured as part of midwives’ communicative expertise. The example is taken from a clinic setting where Nobuntu, the midwife, used code switching as a communicative strategy to shift between the two different addressees – the pregnant woman and the researcher – while orienting to the pedagogic as well as clinical frames of the ultrasound encounter.

Example 1 (Nobuntu, Lindiwe)

Nobuntu:

1. ((Turns back to look at the monitor)) Ok. So what I see at the moment is the bladder. The pregnant woman’s bladder. No extra uterine pregnancy. Then I will do the overview Mm. I am seeing the placenta. ((Video recording zooming in on the monitor, then out again. A noisy car is passing by outside)) Ok. As I have been looking through I have seen there is only one single foetus ((looking at video camera, smiles, turns her head back to the pregnant woman, then to the monitor)) Let us see where to go now. It looks like a transverse Look at ((Looking at camera)) the head where it is. I can see the heart: four chambers ((Pointing at screen)).... () It is moving. Just showing her the profile ... ((Looking at the researcher))....
2. Okay.
3. *Ikhanda lakhe leli sesike salibona. Nakhu uma sibuka ngapha, asibone ukuthi sizokwazi yini ukumubona ebusweni...* (Okay, this is the baby’s head, we have already seen it. Let’s see whether we can look at the baby’s face when we move this direction.) Let me see whether we’ll be able to see the face.
4. *Indlu yakhe la ehlala khona umntwana. Nayi-hymen yomntwana, kukhona umntwana angithi lapha phakathi.* (This is the uterus, here is the amniotic sac, and the baby matures in there.) *Uyabona?* (Can you see?)
5. ((Pointing at screen)) *Bese kuba inhliziyo, uyayibona inhliziyo*
6. *yomntwana, uyayibona inhliziyo yomntwana ukuthi iyashaya, uyayibona sisi...uyayibona?* (This is the heart, can you see the baby’s heart, can you see the baby’s heart beat, can you see it?)

Lindiwe:

7. Ehhe, ngiyayibona.
8. (Yes, I can see it.)

Nobuntu opens her monologue with an online commentary reporting her observation, followed by an immediate diagnostic evaluation: ‘Ok. So what I see at the moment is the bladder. The pregnant woman’s bladder. No extra uterine pregnancy’ (turn 1). It is worth noting that the pregnant woman is referred to as third person. Online

commentaries are thus not necessarily directed at the patient. However, here the co-presence of the researcher explains why Nobuntu foregrounds her orientation to the researcher (turn 1 ‘just showing her the profile’). The online commentaries are interspersed with prospective metacommentaries, some of which are framed in reference to the immediate future almost overlapping with online commentary (turn 1: ‘let’s see where to go now’; ‘let me see whether we’ll be able to see the face when we move this direction’), while others anticipate an activity at a slightly later stage (turn 1: ‘Then I will do the overview’). The online commentary continues in Zulu (turn 4 translated): ‘This is the uterus, here is the amniotic sac’) followed by a brief offline commentary (turn 4 translated): ‘and the baby matures in there’) which occasions an invitation for joint seeing and confirmation of what is to be seen (turn 4 translated): ‘can you see?’). This co-occurrence of online commentaries and repeated invitation to seeing/confirming is sustained in the rest of the extract, culminating in Lindiwe declaring ‘Yes, I can see it’.

Through online commentaries the advanced midwife informs the pregnant woman immediately about what she observes on the monitor of the ultrasound machine during her work with the transducer on the abdomen. The online commentaries have the function of including the pregnant woman in the examination. The offline commentaries are referring to facts, and have a pedagogical function, teaching the pregnant woman about what the observations mean. The metacommentaries are informing about what is going to or what has happened during the examination, and has the function of including the other informants into the stages of the examination. These are all commentaries that contribute to including the pregnant woman into the examination and are thus maintain the relational and ethical proprieties.

5 Discussion and conclusion

Activity analysis offers analytic tools that enable us to identify characteristics of the communication in professional encounters. In the analysis of the communicative expertise of the advanced midwife, two main dimensions of the encounter were identified: one dimension was the *diagnostic evaluation of the medical condition* and the other dimension was the *inclusion of the pregnant woman* in the course of the examination. Due to the nature of the ultrasound technology, the diagnostic evaluation was reported continuously as part of the examination. The communicative strategies that facilitated the inclusion of the pregnant woman during the encounter were: a) framing of the activity in prospective and retrospective metacommentaries, b) reporting of the immediate observations in online commentaries, c) inviting to joint seeing on the screen accompanied by online commentaries and pointing, d) pedagogic explanations and references to facts in offline commentaries. Moreover, the analysis of this brief excerpts also demonstrated the relational challenges of who to relate to as the primary or the secondary addressee, and the focus and role of the technology as a part in the communication.

The communicative expertise of the advanced midwives included paying attention to relational and ethical proprieties, and applying communicative strategies in the health interaction with the pregnant women.

A thorough analysis of typical patterns of the communication in specific medical disciplines can demonstrate aspects of the communicative expertise that can be applied in the education and socialization of healthcare professionals in order to inform and raise awareness about communicative issues.

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Appendix 1: Transcription conventions (from Gilstad [1])

Symbol	Explanation
(name)	The name of a person or persons, clinic or a hospital, anonymised.
(.)	A dot in parentheses indicates a tiny gap, probably no more than one-tenth of a second. Several dots indicate a longer gap.
WORD	Capitals, except at the beginnings of lines, indicate especially loud sounds relative to the surrounding talk
()	Empty parentheses indicate the transcriber's inability to hear what was said. The length of the parenthesized space indicates the length of the untranscribed talk. When the inaudible talk is Zulu, this is marked: (inaudible Zulu). Parenthesized speaker designation indicates inability to identify a speaker.
(word)	Parenthesized words are possible hearings or speaker identifications. The translations between Zulu and English, and English and Zulu, are parenthesized, and the spoken utterances appear immediately before the parenthesis.
(())	Double parentheses contain the transcriber's descriptions and researcher's observations rather than, or in addition to, transcriptions.

_____	The continuous line immediately above or below the transcribed talk and/or silence indicates that the party is gazing at the face of the co-participant. (...) If the fragment involves more than two persons, the person being gazed at is indicated on the line.
-----	The longer dashes are used to indicate that the party is looking at a particular object. Frequently, a series of lengthy dashes is accompanied by a description, such as "records", "fingers", "camera", to indicate what object is being looked at. In this project the following descriptions: ___ ((Looking at the screen))___ and ___ ((Pointing at the screen))___ are recurring in the transcripts.
,,,,,	A series of commas indicates that the party is turning away from a participant
.....	A series of dots indicates that the party is turning towards a co-participant. In multiparty interactions, when one party moves his gaze from one person to another, the notation of dots and commas becomes ambiguous because the person is simultaneously moving away from one co-participant and towards another. On occasions, dots and commas are also used to capture gaze moving towards and away from particular objects.
-----	Close dashes are used to represent movement. They are accompanied by a description to indicate what type of movement it is. (...) If necessary, additional dashed lines above and below the transcribed talk are used to represent other movements in relation to where they begin and end in the talk and/or gaps