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Viittausohje:

Keel, S., Schmid, A., & Keller, F. (2023). Digital technology in physiotherapy consultations: Problem-solving sequences and recruitments [Digitaalinen teknologia fysioterapiakonsultaatioissa: Ongelmanratkaisujaksot ja avun värvääminen]. *Prologi – Viestinnän ja vuorovaikutuksen tieteellinen aikakauslehti*, *20*(1), tulossa. https://doi.org/10.33352/prlg.120498

To cite this article:

Keel, S., Schmid, A., & Keller, F. (2023). Digital technology in physiotherapy consultations: Problem-solving sequences and recruitments. *Prologi – Journal of Communication and Social Interaction*, *20*(1), forthcoming. https://doi.org/10.33352/prlg.120498

Prologi

– Viestinnän ja vuorovaikutuksen tieteellinen aikakauslehti

journal.fi/prologi/

ruotsiksi: Prologi – Tidskrift för Kommunikation och Social Interaktion
englanniksi: Prologi – Journal of Communication and Social Interaction

Julkaisija: Prologos ry.

Prologos

Avoin julkaisu / Open Access
ISSN 2342-3684 / verkko

Article

Prologi, 20(1)
forthcoming
https://doi.org/10.33352/prlg.120498

Digital technology in physiotherapy consultations: Problem-solving sequences and recruitments

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received 1.7.2022 / accepted 26.8.2023 / published 18.10.2023

Abstract

This contribution investigates consultations in which a physiotherapist compiles an exercise program on their computer that the patient can then use at home via a mobile application. It offers an analysis of moments in which physiotherapists encounter problems in locating a specific exercise and of the ways the interactants then achieve a solution. In day-to-day physiotherapy practice, problems with digital technology during the use of health applications or desktop computers occur often. Solving them is experienced as time-consuming and might cause perceived disruptions to workflows and interactions among professionals or between physiotherapists and patients. Adopting an Ethnomethodology and Conversation Analysis (EMCA) approach, our contribution is based on recordings of real-life consultations. It tackles the ways in which problems with a mobile health application (hereafter: the app) are treated in situ and from a members' point of view. Our analysis reveals that identifying and solving problems with the app involve recruitments, i.e., methods through which seeking or volunteering assistance and/or cooperation is achieved. More specifically, it shows that depending on the moments and the ways recruitments are deployed and organized in physiotherapist-patient interaction, solving problems with the app during consultations creates opportunities for patient participation and thus cooperation between physiotherapists and patients.

KEYWORDS: ethnomethodology, conversation analysis, mobile applications, physiotherapist-patient interaction, problem-solving, recruitments

Introduction

Digital technology brings new opportunities and potentials to the field of healthcare and thus also to physiotherapists' practices – these include improving therapy interventions, increasing patients' self-management, and bringing better access to supervision for patients. Yet, studies report that the adoption rate of digital tools in physiotherapy remains low overall (e.g., Dunphy et al., 2017; for a more thorough discussion see Keel et al., 2022). It is argued that their integration into physiotherapy practice is challenging: among other issues, digital technologies profoundly alter the organization of physiotherapy consultations and physiotherapist-patient interactions and add new, technology-related problems to everyday work (Danbjørg et al., 2018; Hennemann et al., 2017; Postolache et al., 2017; Schäublin 2018). Research on how digital tools are used in physiotherapy practice and how technology-related problems are dealt with in interaction is scarce.

This contribution helps bridge this research gap. Our exploratory pilot study on the use of digital technology in ambulatory physiotherapy is undertaken in partnership with Medbase, which owns over 50 medical and physiotherapy outpatient clinics in Switzerland. Physiotherapists are provided with a mobile health application, physitrackTM (hereafter: the app), which allows them to compile and distribute individualized home exercise programs for patients to use at home, monitor patients' progress, offer remote coaching via chat/video, and send educational material to patients. Whereas patients access the app on their private devices, such as a smartphone or tablet, physiotherapists use it via an interface on their work computers or tablets.

Adopting Ethnomethodology and Conversation Analysis (EMCA), this contribution looks at the use of the app in physiotherapy consultations. Based on recordings and multimodal transcriptions of both the physiotherapist-patient interaction and the screen of physiotherapists' computers, it focuses on physiotherapists' compilation of patients' home exercise programs on their professional devices. More specifically, we analyze how problems occurring with the physiotherapists' app interface in the presence of the patient are interactively treated and solved.

A close examination of these moments reveals a distinct interactive accomplishment of recruitments, i.e., methods through which seeking or volunteering assistance is achieved (Kendrick, 2021; Kendrick & Drew, 2016). We show that the interactants' organization of recruitments treats app-related problems and their solution as belonging primarily to the physiotherapists' realm, i.e., the problems occur on the physiotherapists' devices and patients are initially hesitant to cooperate in solving them. Yet, the solution of the problem is not necessarily achieved by physiotherapists alone. In fact, difficulties with digital technology actually create opportunities for patient participation and cooperation between physiotherapist and patient.

Digitalization in healthcare: Promises and challenges

Using digital tools in healthcare is a matter of ongoing controversy, a fact that is also mirrored in the growing body of both qualitative and quantitative research. While studies on the clinical effectiveness of digital solutions have attested that they do in fact successfully support healthcare professionals' work and even yield more beneficial outcomes than nondigital solutions, studies on users' perception and acceptance of digital tools reveal mixed stances

among professionals and patients (Dunphy et al., 2017; for an extensive discussion see Keel et al., 2022). Among other things, users fear that digital tools will disrupt professional workflows (Ross et al., 2016).

One recurrently reported concern related to the disruptive impact of digital tools is that irrespective of clinical benefits, digital tools will also entail new, technology-specific problems that professionals will then have to solve, instead on focusing on patients: users are challenged by problems originating in the design of user interfaces (Postolache et al., 2017), gaps in infrastructure (Dunphy et al., 2017; Hennemann et al., 2017), and technological issues more generally (Danbjørg et al., 2018; Schäublin, 2018).

EMCA studies on digital tools in healthcare have highlighted that new technologies bring challenges but also resources for professional practice (Ekberg et al., 2019; Heath et al., 2003). The impact digital tools have on professionals' orientation toward patients and on patient participation has been critically observed in various contexts, most thoroughly for doctors' use of computers in medical consultations (Beck Nielsen, 2016; Greatbatch et al., 1995).

For various contexts, challenges of digital tools for patient participation have been identified by EMCA studies, for instance because a tool predefined a narrow instead of an open format of conversation (Schoeb & Hiller, 2018), professionals were more focused on the tool than the patient (Beck Nielsen, 2016), delays in remote video calls inhibited smooth turn-taking (Ilomäki et al., 2021), and medical information collected with digital self-reporting tools were treated as self-speaking and not discussed in consultations (Mikesell et al., 2018). Meanwhile, patients were also found to use strategies to regain professionals' attention despite the presence of a tool (Booth et al., 2013). And some tools even provided a chance for patients to participate, as they provided access to information and ways to administer it (Greatbatch et al., 1995; Seuren et al., 2020). Even when digital tools did not work, Mikesell et al. (2018) observed that patients could use discussions of technological problems to formulate their own medical concerns. Thus, technology and even technological problems have beneficial potentials.

In an earlier publication of our study (Keel et al., 2022), we pointed out that technology-specific problems, such as a weak internet connection and an app design that is not suited to the contingencies of physiotherapy practice, were mostly perceived by therapists as disrupting their physiotherapy practice and their focus on the patient, as solving these problems took a lot of time. These findings were based on ethnographic observations of everyday physiotherapy practice and informal interviews.

Our present contribution draws on video-recordings of real-life physiotherapy consultations. We thereby complement our previous findings, as well as other studies that surveyed health professionals' perception of digital tools, by looking at how digital tools are effectively handled *in situ*. Furthermore, it complements the existing EMCA literature on the use of digital tools by putting the spotlight on computer problem solving in healthcare more specifically. This study therefore not only sheds light on how participants overcome the often-invoked challenges that using digital technology presents, but also reveals how they treat some of these challenges as a resource for patient participation and cooperation between physiotherapists and patients.

Treating technology (as) problems through recruitments

From an EMCA perspective, a computer's functioning can only be conceived of as a computer problem if it is treated as such by the users (Greiffenhagen & Watson, 2009). For instance, Råman (2022) describes how teachers of a computer course for elderly users oriented to a problem that their students reported having with a computer either as *teachable*, in which case they taught the students how to solve it, or as solvable, in which case the teachers themselves had to find and implement a solution.

Beyond the healthcare context, there are a few EMCA studies on Human-Computer Interaction (e.g., Frohlich et al., 1994) that have analyzed instances of computer problem solving in a slightly adapted version of the *self-repair* framework of Schegloff et al. (1977). Greiffenhagen and Watson (2009) have criticized this approach as the notion of self-repair implies the conceptualization of the computer as constituting an *Other* conversational partner that engages in repairing encountered problems themselves. They argue that this could lead to confusion as a computer is not treated as a conversational partner by interactants. Looking at instances where pairs of students encountered computer-related problems during a collaborative task on a computer, they argued that even there, the notion of *Self* and Other would be misleading in the case of computer problem solving, as participants treat such problems not as falling into the scope of one of their own or the other user's actions but in the scope of the computer's functioning. Instead of repair, Greiffenhagen and Watson (2009) speak of common computer problem solving as teamwork, with a division of labor between the user in charge of the mouse and the keyboard and the other user. More recently, a number of EMCA studies have suggested that the ways in which users tackle computer problems can be described as involving participants' use of recruitment methods (Råman, 2022).

Recruitments are broadly understood as encompassing a wide range of methods through which participants seek assistance from others and/or volunteer assistance to others whom they perceive as being in need of assistance (Kendrick & Drew, 2016). Systematic examinations of methods reveal their distinct forms and how they involve interactants' use of linguistic, material, spatial, and embodied resources. Further, they discuss how distinct methods are part of and positioned on a "continuum" that goes from the "most explicit" to the "most implicit" ways through which Self obtains assistance from Others (Kendrick & Drew, 2016, p. 1), and/or through which Others volunteer assistance (Kendrick, 2021).

Studies have first focused on the interactive organization of recruitments in mundane everyday face-to-face interactions or service encounters (Heritage, 2016). They have allowed a shift of attention from spoken actions, such as *requests*, through which Self explicitly seeks assistance and help and makes Others' assistance conditionally relevant, to the embodied and situated accomplishment of people's tacit solicitations and voluntary provisions of assistance and help (Drew & Kendrick, 2018; Kendrick, 2021). By shedding light on the details of face-to-face situations in which a difficulty is displayed in a manner that allows another to understand that assistance might be needed and provide it (Drew & Kendrick, 2018), revealing their embodied, materially and spatially situated features, research on recruitments has thus expanded the investigation of a ubiquitous and crucial bedrock of social life, i.e., solidarity (Heritage, 2016).

Lately, the occurrence of recruitments has also been studied in institutional settings. In contrast to recruitments occurring in everyday interactions, González-Martínez and Drew (2021) reveal the interactive organization of recruitments, as they occur as part of an organizational working routine in a hospital setting. Here, recruitments are not oriented to as resolving a particular trouble encountered by Self. Instead, they are *instrumentally oriented* and concern the solicitation and provision of cooperation among nursing colleagues. Nurses' *informings* and the ways they are responded to draws upon an organizational routine that concerns the transfer of patients from recovery to the ward. In the timeframe of a brief phone call, the recovery nurse's informings, which are characterized by their "declarative format and the absence of initial interrogative formulas/pronouns, subject-verb inversion or rising intonation," are treated as a "prompt for [cooperative] action" by the recipient, the surgery nurse (González-Martínez & Drew, 2021, pp. 54, 56).

A study on collaborative writing in a school setting shows how students use practices such as *lifting the pen* or the *gaze* to recruit Others in the process of writing, although *inscribing* constitutes a task that cannot be accomplished together; only one person can use the pen at a time (Mlynář, 2022). The study proposes to unpack distinct practices such as lifting the pen versus lifting the gaze by Self to discuss how responses to recruitments can in the former case be understood as assistance, and in the latter case as joining the ongoing course of a collaborative task, "as it visibly indicates that the text production is no longer the inscriber's 'individual' task but once again 'everyone's' task" (Mlynář, 2022, p. 17).

In contrast, in our data, recruitments for solution-oriented cooperation are not provided by an institutional (routine) division of labor (González-Martínez & Drew, 2021) or by distinct rights and obligations that are conventionally attached to participants, for example, when teachers help students in a computer course to solve an encountered trouble (Råman, 2022).

Our examination of two moments in which physiotherapists encounter a problem with their app interface during the compilation of exercise programs on their computers reveals an apparent paradox: although both physiotherapists and co-present patients deploy a number of recruitment methods over the course of the interactions, only one patient eventually comes forward with a candidate solution to the problem at hand. Understanding the reasons for this apparent paradox requires taking the detailed organization and situatedness of the problem-solving sequences into account.

Data and method

This contribution is part of our exploratory pilot study on the use of digital tools in ambulatory physiotherapy (DigPhysio), which adopts a workplace study approach (Luff et al., 2000) to investigate how the use of the app and other digital tools is organized in physiotherapy interaction. Its aim is to show how details regarding the organization of interaction are critical for both physiotherapy work practices and the efficient use of digital tools. Investigating the use of the app moment by moment in interactions between physiotherapists and patients, the study involved three fieldwork phases.

First, we conducted ethnographic fieldwork in two German-speaking Medbase sites from February to June 2020. We followed physiotherapists (N=13) in their daily work. During therapy consultations, administrative work, and team

meetings, we observed and took notes on physiotherapists' and patients' practices with digital tools in general and the app more particularly. We also held informal ad hoc interviews during breaks to elicit physiotherapists' perspective on their experience with the app in their work and patients' (N=43) experience with digital tools in their daily life and/or with the app.

Second, face-to-face (f-2-f) consultations and one remote consultation, in which the app was introduced to a patient for the first time (N=8) and then used in follow-up consultations (N=19), were video-recorded. Altogether, our recordings involved four physiotherapists (PHYa–d) and eight patients (PATa–h):

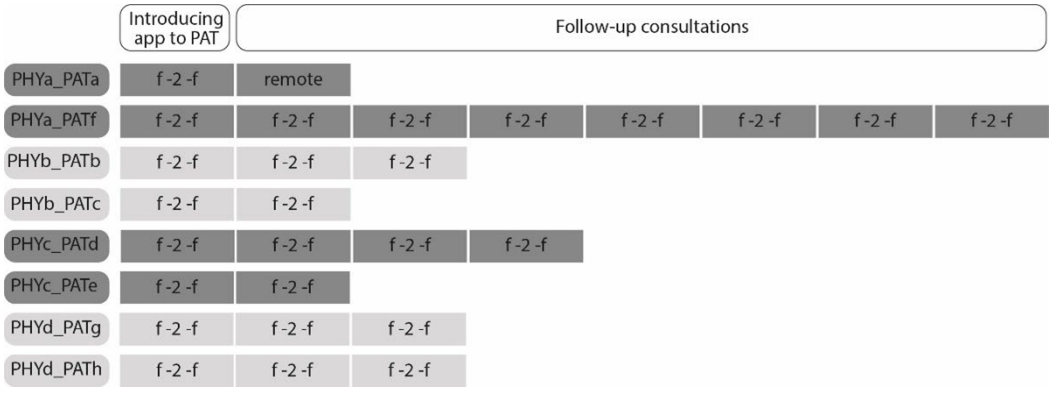


Figure 1. Video-recorded physiotherapy consultations

The interactions between the physiotherapists and patients were filmed and the screen of the device that each physiotherapist used to operate the app's interface was recorded, allowing us, for example, to investigate the ways the physiotherapists compiled an exercise program for the patient during the consultation. The two recordings resulted in a total of 13 hours and 11 minutes of synchronized material. The synchronized videos were transcribed adopting the conventions developed by Jefferson (2004) and Mondada (2018).

Third, we conducted semi-structured interviews with the physiotherapists (N=4) and patients (N=8) participating in the second phase. The aim was to check our preliminary observations and learn more about their opinions of the app. The audio-recordings were transcribed verbatim. We examined this data-set, considering previously made observations, while adopting an inductive thematic analysis (see Braun & Clarke, 2006).

This contribution focuses on the detailed analysis of two sequences of interaction in which the physiotherapists express or display a difficulty with the app interface while compiling an exercise program for a co-present patient. It is based on the analysis of video-recordings of consultations in which the app was introduced for the first time (see Figure 1). Yet, the examination of data from the other two phases informed our focus in the first place.

Compiling a program during a consultation

Our ethnographic fieldwork revealed that physiotherapists considered the compilation of the home exercise programs they were to distribute to patients via the app as particularly time-consuming: they pointed out that (a) using a piece of paper to sketch a home exercise program and handing it to the patient is much quicker, (b) the training to use the app was not sufficient, notably to get a grasp of the 4,500 exercise videos the app offers, and (c) the design of the app's therapist interface was not user-friendly when it came to compiling exercise programs, for instance because the exercise videos were not named in a way that enabled easy and quick compilation. More generally, physiotherapists found that they would need to have much more time at their disposal during working hours than they actually did if they were to develop an efficient use of the app and become comfortable using it (see Keel et al., 2022). Introducing (Keel et al., in press) and using the app during consultations was thus overall considered as aggravating the time pressure generated by tackling workdays made up of a series of consecutive 30-minute consultations.

Moreover, to compile an individualized exercise program, the physiotherapists are to select a few exercises, usually between two and eight, out of the 4,500 exercise videos that the app provides. The compilation task thus involves searching for and finding exercise videos that are in line with the patients' therapeutic aims. During semi-structured interviews with physiotherapists a–d, whom we had video-recorded, it became clear that they did not conceive the compilation of the exercise program as a collaborative task to be accomplished together with the patient (PHYc). On the contrary, the physiotherapists stressed that during consultations they considered it their job to compile the exercise program efficiently and quickly to not use up too much valuable consultation time (PHYa; PHYd). The very idea of not finding an exercise immediately and having to search for it in the presence of the patient was considered unprofessional and embarrassing (PHYb). Doing the compilation before or after the consultation, during a break, was preferable (PHYa). Our analysis thus focuses on situations that physiotherapists consider to be problematic overall and the solution they feel responsible for finding.

Recruitments in physiotherapy exercise program compilation

The video-recorded consultations lasted for approximately 30 minutes each and were composed of distinct activities. The compilation of the exercise program might occur at one of two distinct moments in the consultation: either before the patient is instructed to do the exercise(s) (see PHYd+PATg in Figure 2) or after the patient has been instructed to do them (see PHYc+PATd in Figure 2).

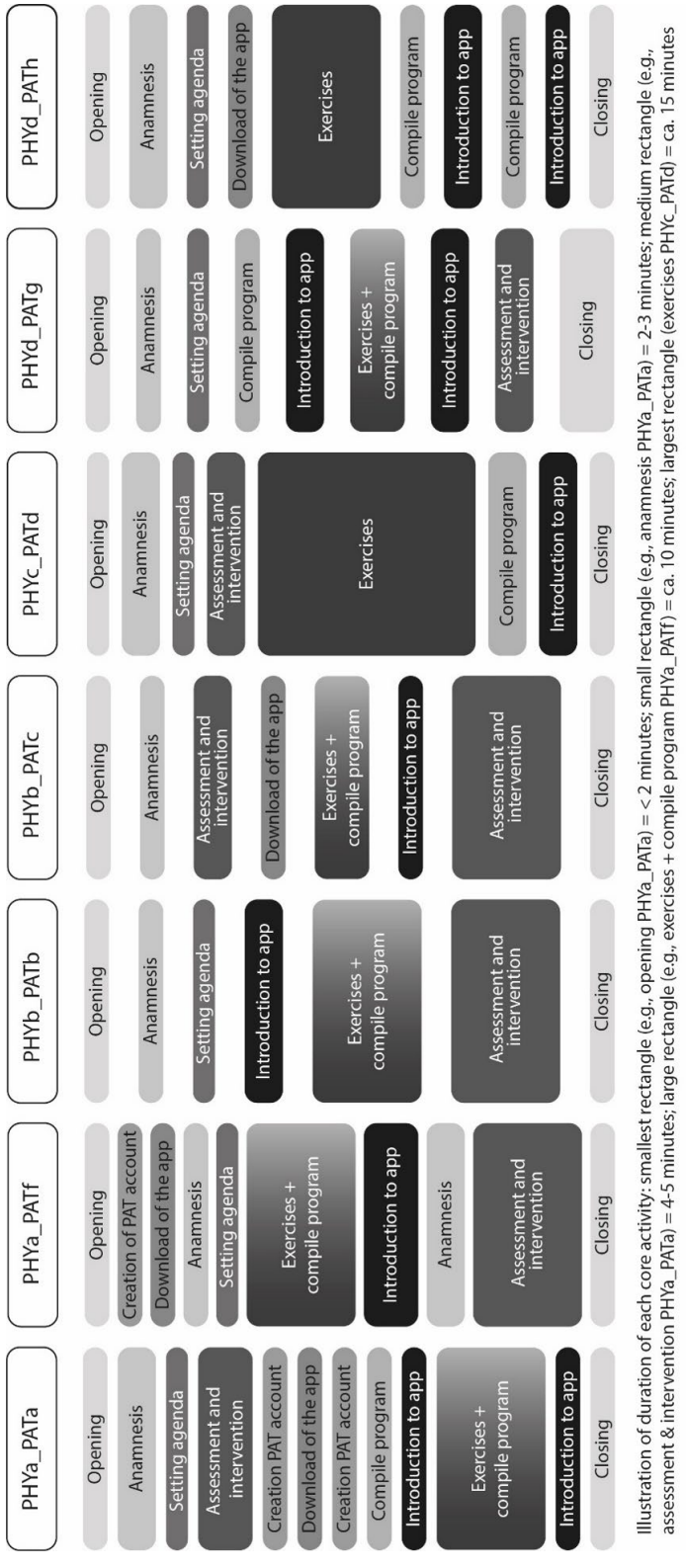


Figure 2. Activity structure of examined consultations

In the problem-solving sequences examined here (see Extracts 1a–e and Extracts 2a–e), the physiotherapists are operating the app interface on their respective computers to compile their co-present patients' exercise program: participants concurrently orient and finely tune their actions in relation to both to each other and to what is happening on the screen. Consequently, the therapists' operation of the app is contingent both upon the screen activities and the patients' conduct. Vice-versa, embodied manifestations of trouble by the therapist might lead patients to accordingly display increased availability and involvement to cooperate in the task at hand.

This configuration is comparable to situations in which students use *phygital* highlighting, for example, by combining pointing (or another physical action) and moving the cursor (or doing another digital action) to achieve a shared reference (Due & Toft, 2021) when they are engaged in collaborative designing tasks on computers (Greiffenhagen & Watson, 2009). As we will show throughout the analysis of the extracts, in contrast to the computer-related problem and task-solving investigated by Due and Toft (2021) or Greiffenhagen and Watson (2009), the setting examined here does not involve collaborative task-solving between physiotherapist and patient from the outset of the compilation task. Depending on the placement of the task in the consultation, i.e., before (Extract 1) or after (Extract 2) exercise instruction, and through participants' distinct organization of recruitment methods, the physiotherapist eventually solves the problem with the app alone (Extract 1) or the physiotherapist and patient solve the problems with the app cooperatively (Extract 2). In their organization of recruitments, the physiotherapist and patient seem to attribute different rights and obligations to each other, displaying their orientations to the institutional setting at hand.

Recruitment and patient's preliminaries to cooperation

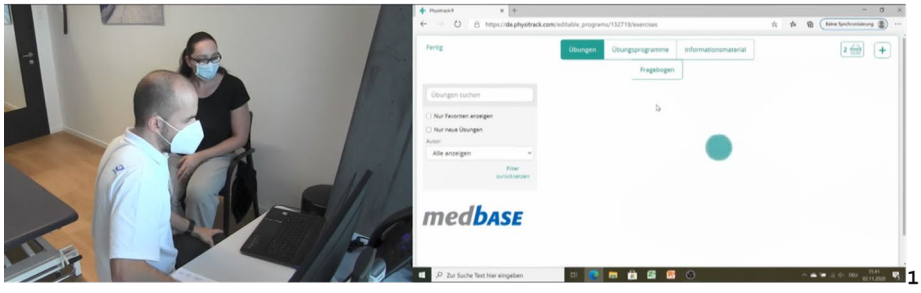
Before Extract 1a begins, physiotherapist d (PHYd) has already added an initial exercise to the program of patient g (PATg). After instructing PATg how to do this exercise at home, PHYd walks back to the computer to add another exercise to the program (see Figure 2; PHYd–PATg)[1].

Extract 1a

```
1          |und denn
            and then
   phyd    |moves cursor over screen->1.10
2          (0.7)$
   patg       ->$-sits on chair->1.11
3          no | eini
           another one
   phyd     ->| clicks on "Übung hinzufügen" ("add exercise")
```

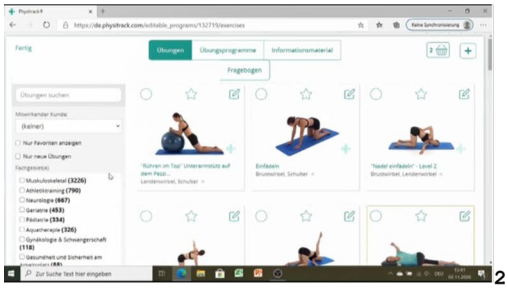
[1]During the consultations, PHYd_PATg conversed in Swiss German and PHYc_PATd in English as a lingua franca. In the former case, we produced a one-line approximative translation of their talk into English (see Extracts 1a–1e).

4 **wo@ ¢meh für s chnü:$:#**
that more for the knee
appPC @-app loading->
patg ->¢-clearly looks at PC->1.43
patg ->$
fig. # figure 1



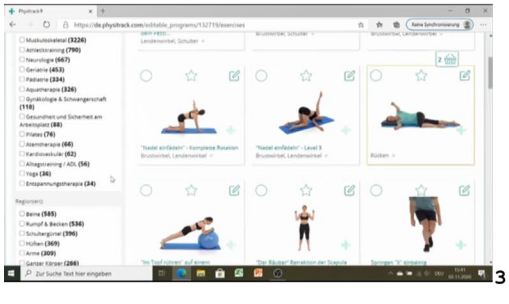
1

5 **(0.5)@|(0.3)**
appPC ->@ displays list of exercises
phyd |-moves cursor over screen toward filter list->
6 **>aso für s chnü< allegemein isch|#**
well for the knee generally is
phyd ->|
fig. # figure 2



2

7 **|(0.5)|#(1.0)**
phyd |scrolls down the list of exercises|
phyd |pauses
fig. # figure 3

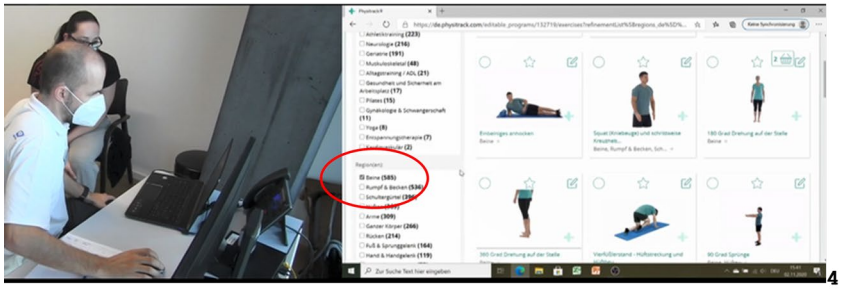

3

At the beginning of Extract 1a, PHYd is already sitting in front of his computer, focusing on the screen and moving the mouse to operate the cursor (l. 1), while PATg walks toward her chair, sits down next to him (l. 2), and also orients to his computer screen (f. 1). She positions herself in such a way that she has access to the changes on the screen that PHYd's operations engender (f. 1–3). Operating the cursor, PHYd begins his utterance with *and then* ("und den" l. 1), indicating that what follows is part of a series of actions that are retrospectively and prospectively related to each other (Keel et al., in press). Continuing his utterance with an indexical *another one* "no eini", he clicks on *add an exercise* ("Übung hinzufügen" l. 3). Shortly after his click, the app starts loading (l. 3; f. 1), while he continues his sentence by specifying what body part the exercise is for: *the knee* (l. 3–4). PATg is meanwhile focusing on PHYd's screen (l. 4), on which six exercise icons first appear (l. 6, f. 2) and then, engendered by PHYd's scrolling down (l. 7), three new exercise icons appear (f. 3). Shortly after the appearance of the first six exercise icons, PHYd resumes his previous specification (l. 6).

PHYd's talk is finely coordinated with his handling of the mouse and with the appearance of distinct screens (f. 1–3). In the meantime, PATg remains silent throughout Extract 1a. She thus leaves PHYd the interactional space to focus on the computer screen and operate the app unhindered. Through fine coordination, PHYd's task is reflexively constituted and made relevant for the further course of action: finding an exercise for the knee to be compiled in PATg's exercise program.

Extract 1b

```
8          |ä|:|hm|:|
   phyd    |scrolls down the list of exercises|
   phyd      |moves cursor slightly|
   phyd        |pauses|
   phyd           |moves cursor slightly|
   phyd             |pauses->
9          (0.4)|(0.8)|(0.3)|(0.3)@(0.2)|(0.8)@#(0.9)
   phyd       ->|moves cursor toward filter "Beine" ("legs")|
   phyd               |pauses|
   phyd                     | clicks on filter "Beine" ("legs")
   appPC                          @app loading@
   phyd                                 |moves cursor over screen->
   fig.                                        # figure 4
```



4

```
10        (tsk)
11        |(0.3)|(.)
   phyd   >|scrolls up|->moves cursor to search field->
12        °jez gs£ehn| ich| s:£ da (wieder; irgendwie)| (nöd)°
          now I do(n't) see it here (again;somehow)
   phyd             ->| clicks on search field
   phyd                    |moves right hand toward keyboard|
                                                    |enters "lung" ->
   phyd          £moves left hand toward keyboard£
```

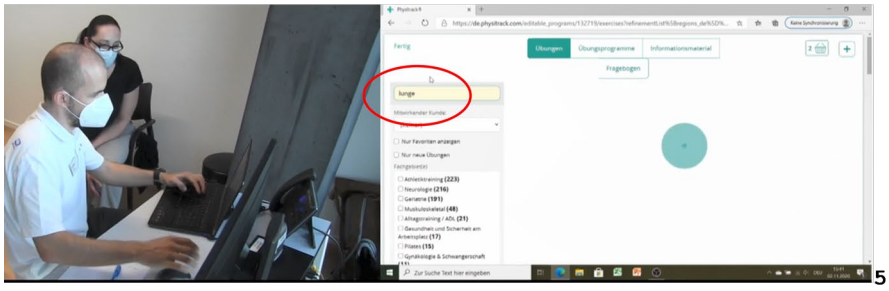
While continuing to scroll down the list of exercises, PHYd utters an initial hesitation marker (l. 8), which is often deployed to delay a dispreferred next action (Pomerantz, 1984). In the recruitment framework, these hesitation markers can be understood as trouble alerts that indicate a difficulty without conveying what exactly it consists of (Kendrick & Drew, 2016). PHYd then moves the cursor, pauses twice, and finally moves it to the filter *legs* ("Beine" l. 9), clicks on it, waits until the app has loaded a new window (f. 4), makes a clicking sound with his tongue (l. 10), and after a short silence (l. 11), formulates a *report of difficulties* (Kendrick & Drew, 2016, p. 4): *now I do(n't) see it here (again; somehow)* ("jez gsehn ich s: da (wieder; irgendwie) (nöd)"), while entering the beginning of the name of an exercise ("lunges") in the search field (l. 12).

A problem report has been described as a method of recruitment (Kendrick & Drew, 2016). In a similar vein, it has been pointed out that doctors' use of *online commentaries*, i.e., descriptions of what they find during a physical examination, allows for example the other members of the team to anticipate and prepare for possible future steps in the treatment of injured emergency patients and thus facilitate cooperation within a team (Heritage, 2017). Meanwhile, as shown in Extract 1b, PATg does not offer cooperation in response to PHYd's trouble report, nor does she display increased involvement in PHYd's actions: she continues merely to look at the screen, remaining silent. Indeed, with respect to recruitment methods, it has been shown that Self's problem reports are less implicative for present Others, than addressing Others with a direct request for assistance or cooperation (see the recruitment continuum of Kendrick & Drew, 2016). Furthermore, unlike the medical team described by Heritage (2017), PATg is not a colleague, but a patient of PHYd. She seems to orient to this difference in rights and obligations by leaving the solving of the trouble to PHYd.

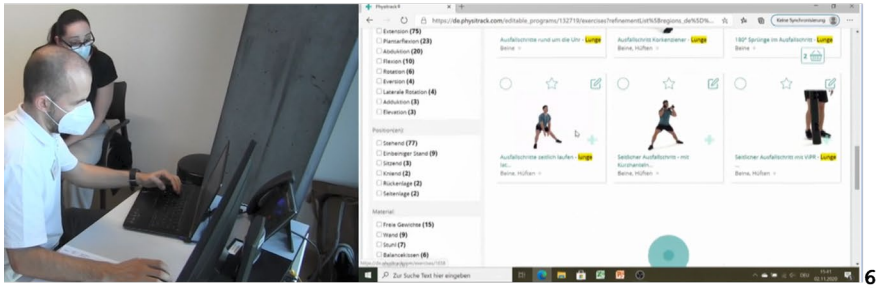
Extract 1c

```
13        (0.2)|(0.3)|(.)|(0.3)@(0.6)#|(0.3)@(1.4)|(0.5)|(1.9)
   phyd      ->|hands paused over keyboard
   phyd              |enters "e" (search reading "lunge")|
   phyd                  |moves right hand toward mouse|
   appPC                       @app loading@
   phyd                              |moves cursor over screen|
   phyd                                        |scrolls down|
   phyd                                              |moves cursor over
                                                      several exercises->
```

```
fig.                                  # figure 5
```



```
14          |(0.6)|(0.6)@(0.8)|@(0.4)|(0.5)|(0.8)@(0.6)|@(1.1)
    phyd    >|scrolls down while keeping cursor on same exercise|
    phyd          |puts cursor in middle of this exercise|
    appPC               @preview of video plays@
    phyd                      |scrolls down|
    phyd                             |moves with cursor to other exercise|
    phyd                                   |stays on this exercise|
    appPC                                        @preview of video plays@
    phyd                                               |scrolls down->
15          ö:hm:@:: # hm| hm hm::/
    appPC       @list of exercises indicates loading->
    phyd              ->|-pauses->
    fig.            # figure 6
```

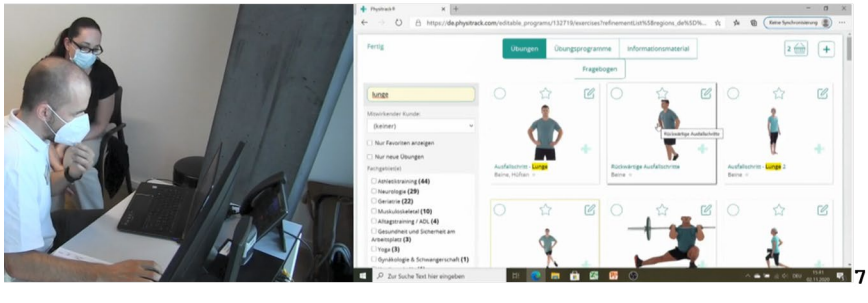


```
16          (0.4)|(0.3)|(.)@(1.0)|(0.4)|(0.8)|(0.3)|(0.2)|(1.1)|(2.3)
    phyd      ->|moves cursor over screen|
    phyd              |-pauses--|
    appPC               ->@ new exercises appear at end of list
    phyd                      |scrolls up|
    phyd                             |pauses, cursor on one exercise|
    phyd                                   |moves cursor to other exercise|
    phyd                                         |scrolls to end of list->
17          |(0.6)|(0.5)|@(0.3)|(1.3)@(0.7)|(0.5)|(0.4)
    phyd    >|moves cursor to the “edit” button of one exercise|
    phyd          |pauses|
    phyd                |scrolls down|
    appPC                @list of exercises indicates loading@
    phyd                       |-pauses----|
    phyd                                   |scrolls down|
    phyd                                         |pauses->
18          |(0.2)|(1.1)@(0.7)@|(0.3)
    phyd    >|moves cursor to one exercise|
    phyd          |rests with cursor->
    appPC               @video preview@
    phyd                       |moves cursor->
```

In lines 13–18, PHYd deploys distinct methods to find the exercise, and thus to solve the difficulties he reported in the previous extract (1b), without success. After delimiting the list of exercises by entering the name of an exercise ("lunge") in the search field (l. 13, f. 5), and by looking at the preview of one exercise appearing on the screen (l. 14), PHYd produces some hesitation markers (l. 15). These markers can again be understood as trouble alerts. He thus displays an incipient unease with the situation at hand. After further scrolling down (l. 15), up (l. 16) and down the list of exercises again (l. 17), skimming through distinct exercises appearing on the screen (l. 16–18), and generating another video preview (l. 18), he resumes talking.

Extract 1d

```
19        ja
          yes
20        (0.6)|(.)
   phyd      ->| scrolls up via button on right side of screen->
21        ä:hm >genau\< (0.3) <((laughs)) h:: h>|
          uhm  exactly
   phyd                                          ->|pauses->
22        (0.6)|(.)
   phyd      ->|moves cursor->
23        jez mu@|essi| (da; ä) grad churz@| lue|ge/|¢@
          now I must (here; also) just quickly look
   appPC        @jumps back down in list where PHYd has been l.17
   phyd       ->|clicks?|
   phyd              |moves cursor toward shopping basket|
   appPC                                  @shopping basket window pops up@
   phyd                                    |moves cursor further
                                             toward scroll button|
   phyd                                        |pauses|
   phyd                                              |clicks on scroll button
   patg                                               ¢moves upper body->l.27
24        |(0.5)|(0.2)^(0.2)|(0.3)
   phyd  |scrolls up via button on right side of screen|
   phyd        |clicks (to fix scrolling up?)|
   patg              ^bobs right leg->l.37
   phyd                    |moves cursor to an exercise,
                                keeps it on its middle->
25 PATg   (finde sis nid; findet es s'nid; was passiert)/ #|
          (do you not find it; does it not find it; what happens)
   phyd                                                  ->|moves cursor to
                                                             other exercise->
   fig.                                    # figure 7
```



7

In line 19, PHYd utters an agreement token while scrolling up again, this time using the button on the right side of his screen, and then an "ähm," a confirmation token *exactly* "genau", and after a 0.3 second pause, a laugh (l. 21). Speakers' laughing at the completion of an utterance constitutes one way of inviting laughter, and thus of seeking alignment, from recipients (Jefferson, 2006). In ordinary conversation, inviting recipients to affiliate constitutes one method through which a speaker can modify the focus away from previous trouble talk, while not closing it altogether (Jefferson, 1988).

In the case examined here, PHYd's laugh occurs after a long silence that might be experienced as problematic by the physiotherapist. Yet, PATg does not treat PHYd's laugh as an invitation to join in laughing. Moreover, in contrast to *declination techniques* which consist, for example, of recipients' talking seriously, instead of joining in a speaker's laughter (Jefferson, 2006), here PATg just stays silent (l. 22). She thereby invites PHYd to remain focused on fixing the trouble. PHYd aligns with PATg: after 0.6 seconds of silence (l. 22), he moves the cursor, causing the screen to jump back to the one visible in line 18, and then formulates his next action: *now i must [here; also] just quickly look* ("jez muessi (da; ä) grad churz luege/, l. 23).

While PHYd talks, PATg first starts to move her upper body slightly (l. 23), then bounces her right leg up and down (l. 24). It has been argued that in mundane interaction, "[e]mbodied displays of attention and availability" by Other commonly constitute *preliminaries* to offers of assistance (Kendrick, 2021, p. 70) and systematically serve as "first methods employed by Other upon recognition of Self's trouble" (Kendrick, 2021, p. 71). Here, PATg seems to deploy embodied movements as a preliminary to her noticing (l. 25), which she produces in a low volume and with a barely audible rising intonation (l. 25).

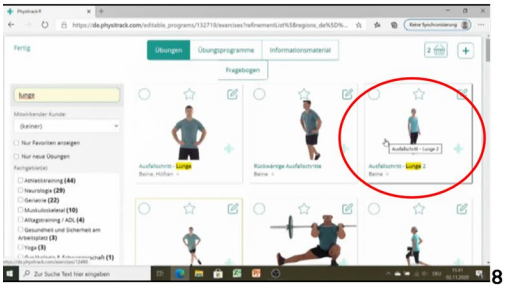
She thus audibly displays attention to PHYd's actions and recognition of a trouble he is encountering in compiling the exercise program. At the same time, her noticing constitutes a "diagnosis of the trouble and displays a greater involvement in Self's course of action" (Kendrick, 2021, p. 72) than was the case so far. PATg's noticing could potentially constitute a trouble report (Kendrick, 2021), as she offers a potential formulation of a trouble. Note however, that trouble reports examined in mundane interaction allow Other to account for a trouble that Self has not publicly noticed so far and thereby enable "a resolution of the trouble by Self" (Kendrick, 2021, p. 75).

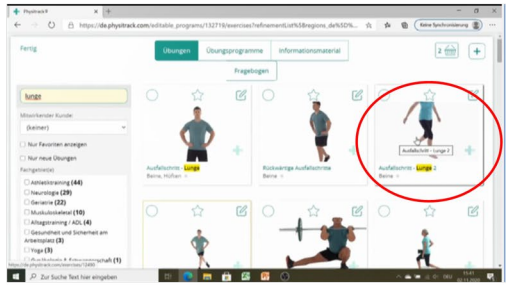
In contrast, in Extract 1d, PATg's noticing occurs after several trouble alerts and reports by PHYd (Extract 1b; l. 12; Extract 1d; l. 23). Furthermore, with its low volume, rising intonation, and interrogative format, PATg's utterance does not seem to assert the nature of a trouble as a fact, as the trouble alerts in Kendrick (2021) do, but displays a lot of uncertainty and low entitlement (Heritage, 2012a). It thereby leaves the authority over the identification of the trouble to Self and constitutes another preliminary action (Kendrick, 2021). By showing availability for cooperation, yet not offering it directly, PHYg seems to scan whether such cooperation would be an adequate option for PHYd. Again, PATg apparently orients to a difference between her own and PHYd's rights and obligations by leaving the solution of the trouble to PHYd.

As shown in the continuation of Extract 1d (Extract 1e), Self (PHYd) resolves the trouble, instead of accepting Other's (PATg's) incipient offer of cooperation for solving it.

Extract 1e

```
26          (0.7)
27 PHYd     i:ja:| °es isch# jez het's s¢ich @da grad# veränd@eret°
            i:yes   it is    now it just has changed here
   phyd       ->| moves cursor slightly in middle of this exercise->
   appPC                                      @video preview plays@
   patg                                  ->¢
   fig.                    # figure 8                  # figure 9
```


8


9

```
28          (0.4)@(4.6)#
   appPC        @video preview restarts and plays longer->
29 PHYd     gena|u mir näh@me di:|e
            exactly we take this one
   phyd       ->|moves cursor to checkbox of this exercise|
   appPC               ->@
   phyd                          |clicks on checkbox of this exercise|
30          (0.4)
```

First, PHYd responds with an agreement token to PATg's intervention. Without further delay, he then accounts for his trouble, plays another video preview (l. 27–28), and finally announces his decision with respect to the selection of another exercise for PATg's exercise program (l. 29), while implementing the selection at the end of his utterance without waiting for PATg to confirm or otherwise acknowledge his solution of the problem.

In sum, in Extract 1, PHYd adds another exercise to PATg's program before he shows her how to do it. Throughout the extract, both participants use a variety of recruitment methods to account for a problem with the app and to tackle it. However, the repeated trouble alerts (Extract 1c; l. 15+19) and reports (Extract 1b; l. 12; Extract 1d; l. 23) by PHYd only engender a preliminary action to an offer of cooperation by PATg (Extract 1d; l. 25), through which the latter seems to scan the adequacy of such an offer. Moreover, parts of the participants' recruitment organization seem to be particular to the institutional setting examined here, e.g., PHYd's trouble alert and laughter (Extract 1d; l. 21) is met by PATg's silence. By keeping silent, PATg invites PHYd in turn to remain focused on the task at hand: finding a solution for the encountered trouble.

Overall, the embodied organization of recruitments orient to and at the same time constitute PHYd as being in charge of identifying and solving the trouble, with PATg showing availability but not offering cooperation. This organization of recruitment methods thus also seems to reflect and reproduce different rights

and obligations for patient and physiotherapist in the institutional setting of a physiotherapy consultation. In Example 2, we see a similar organization of recruitment methods. Here, however, recruitment by Self leads to cooperation by Other.

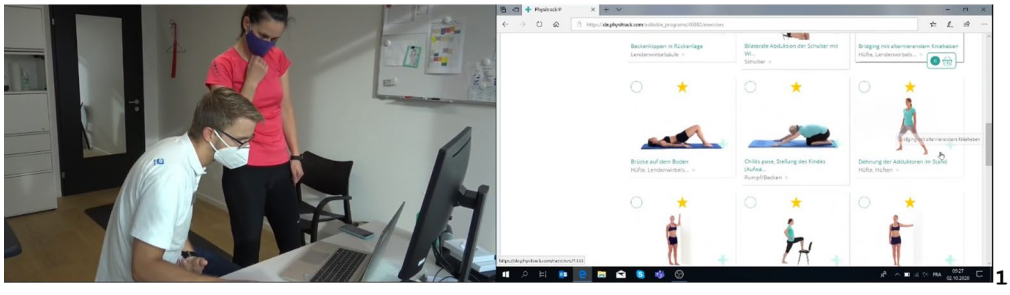
Recruitment and patient's offer of cooperation

Just as in the previous example, in Extract 2, physiotherapist c (PHYc) and patient d (PATd) are in front of a laptop on which PHYc is compiling PATd's exercise program, as shown in figure 1 in Extract 2a, when PHYc encounters a problem. In contrast to Extract 1, PHYc has instructed PATd in the exercises that will appear in the program before compiling the program on his computer (see Figure 2: PHYc-PATd). Although PATd too initially treats the problem-solving as belonging to the realm of PHYc, a stepwise offer of cooperation by her can be observed here.

At the beginning of Extract 2a, PHYc is scrolling through the list of exercises.

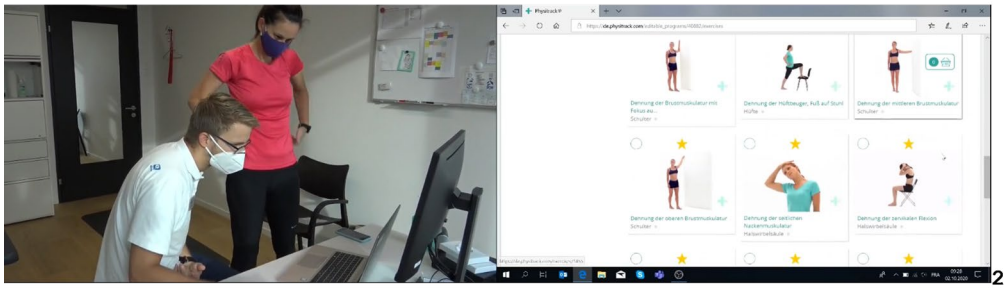
Extract 2a

```
1          %(0.8)%
     phyc  >%-scrolls down-%
2    PHYc  so we re gonna (0.2) uh%m: sta:rt/#
                                  %-scrolls down->
     fig.                                  # figure 1
```



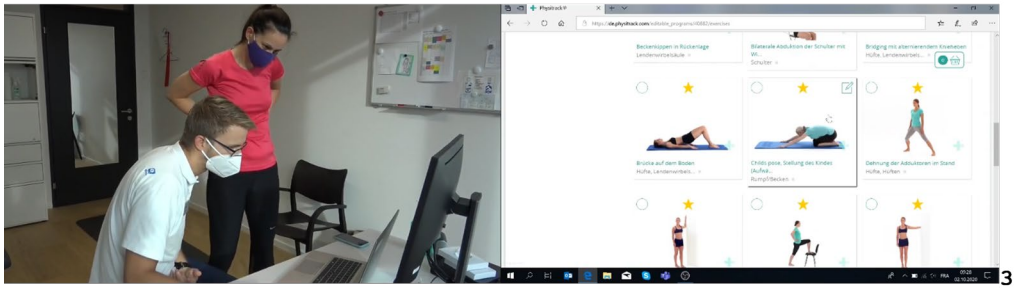
1

```
3          (0.5)%(1.2)%(1.3)% # (0.2)
           >----%      %-scrolls down%
     fig.                     # figure 2
```



2

```
4   PATd   °x°
5          %(0.3)%
       phyc   %-scolls up-%
6   PHYc   so we (re) gonna/
7          (.)*(0.#6)%(0.4)
       phyc      *clicks on exercise in middle
       phyc            %-scrolls down->1.31
       fig.          # figure 3
8          ye:a:h\ (0.2) a couple of the /stretching exercises
```

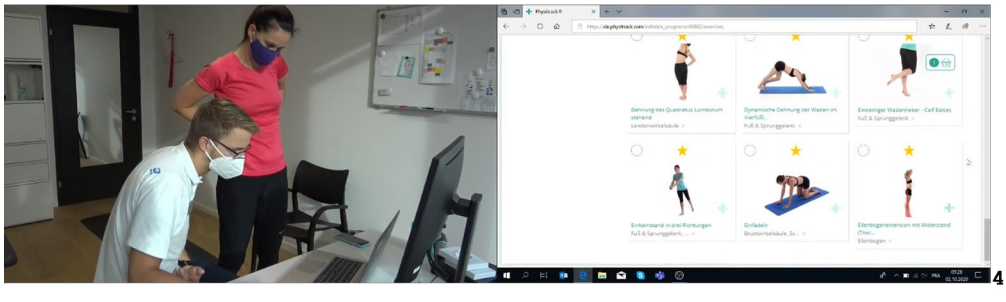


3

At a certain moment, he scrolls up (l. 5) and selects an exercise (l. 7). He announces what they are about to do (l. 2+6) and explains what kinds of exercises he is choosing (l. 8). The interaction is clearly focused on what is happening on the screen, while PHYc's comments account for PATd's presence. PATd is herself not intervening and attentively focuses on what PHYc is doing on the screen, leaving PHYc the necessary space to do so. Furthermore, in contrast to Extract 1, PHYc consistently uses the first-person plural pronoun "we" (l.2+6), thereby including himself and PATd in a shared activity. They orient to the compilation of the exercise program as a form of collaborative work (Greiffenhagen & Watson, 2009; Mlynář, 2022) with which they continue, as depicted in Extract 2b, until PHYc scrolls down to the lower bottom of the list of exercises (l. 9).

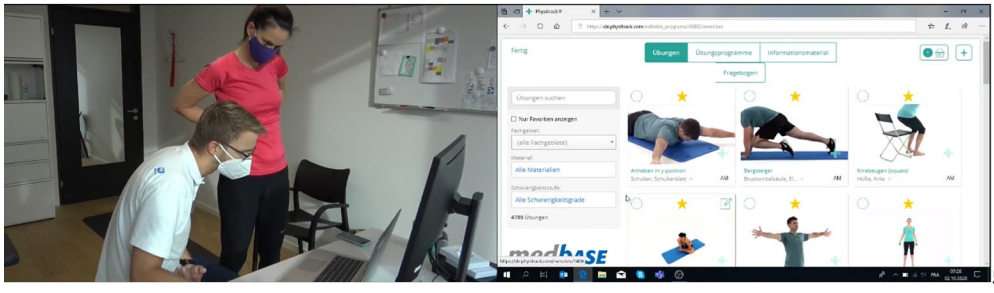
Extract 2b

```
9          (0.8)%(0.5)*(1.4)*#(0.7)
       phyc   >----%bottom of page
       phyc              *sound of scrolling down
       phyc                    *sound of scrolling down
       fig.                     # figure 4
```



4

```
10        % (.) %(0.6)%(0.2)%(1.5)
   phyc   %scrolls up a bit%
   phyc                %scrolls down-%arrives at bottom of page
11        %(1.2)%(0.8)%(2.2)%%(1.0)
   phyd   %scrolls up%
    phyd               %scrolls to top of page%
    phyd                      %moves cursor over screen->
12 PHYc   °(actually; i see)#°%
          >-------------------%
   fig.                     # figure 5
13        (1.3)%(2.0)%(.)*(1.2)
               %scrolls down% arrives at bottom of page
                        *sound of scrolling down
```

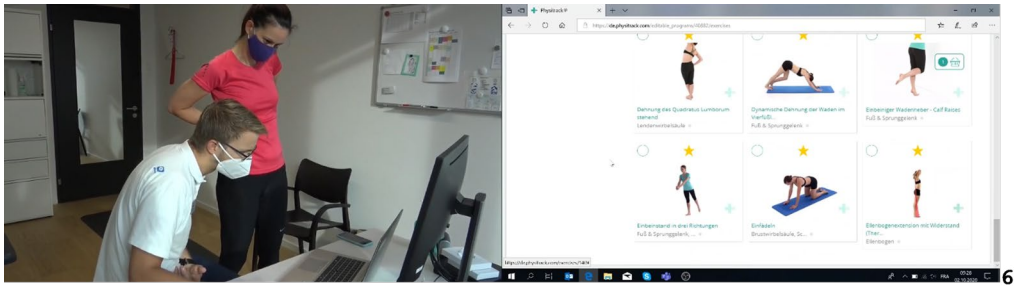


5

PHYc then tries to scroll further down several times while the screen remains unchanged (l. 9–10). Apparently, PHYc is expecting that he can scroll further down the list. Next, he scrolls up to the very top of the list and then down again (l. 11–13). His barely understandable turn (l. 12) is no longer addressed to PATd. Instead, PHYc focuses on the screen for quite some time. In terms of recruitment, his repeated attempts to expand the list might be considered an embodied display of trouble (Drew & Kendrick, 2018). While Greiffenhagen and Watson (2009) looked at cases in which computer problem solving was part of collaborative work, PHYc here seems to treat the occurring trouble as being his responsibility alone and tries to solve the problem himself. In line with this, PATd does not interfere and leaves the therapist the space for problem solving.

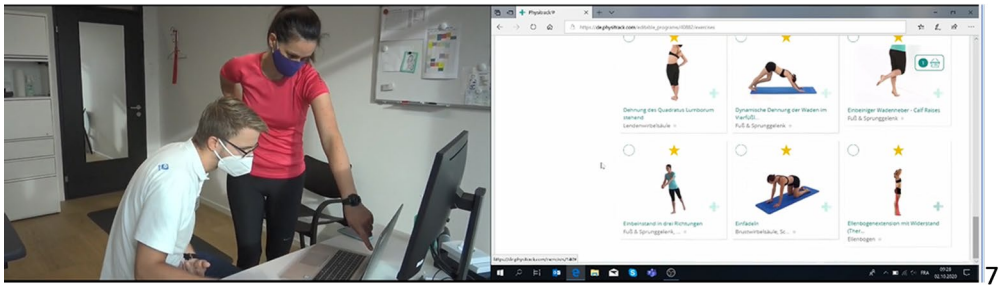
At the same time, PATd actively monitors and attends to PHYc's actions on the computer screen, which is a first preliminary to offering assistance (Kendrick, 2021), and can perceive his display of trouble, as well as his course of action. Indeed, in Extract 2c, PATd makes a next step in offering cooperation: while her focus on the screen was not necessarily perceptible for PHYc, she now clearly displays her attention by explicitly commenting on the occurrence of trouble (l. 14).

Extract 2c



6

```
14 PATd  °(there are no; i don't know) [xxx°]
15 PHYc                                [there s som:e]# yeah some
   fig.                                                 # figure 6
16       °o%f°% (0.5) °the exer%cises a%re missing here\°
   phyc    %scrolls up%
   phyc                          %scrolls up%
17       (1.2)
18       uhm::
19       %(0.2)%(0.8)
   phyc  %scrolls down%
20       §(0.3)
   patd  §-points to PC1->l.42
21 PATd  (is) (.) (that/; not/)#
   img                           # figure 7
```



7

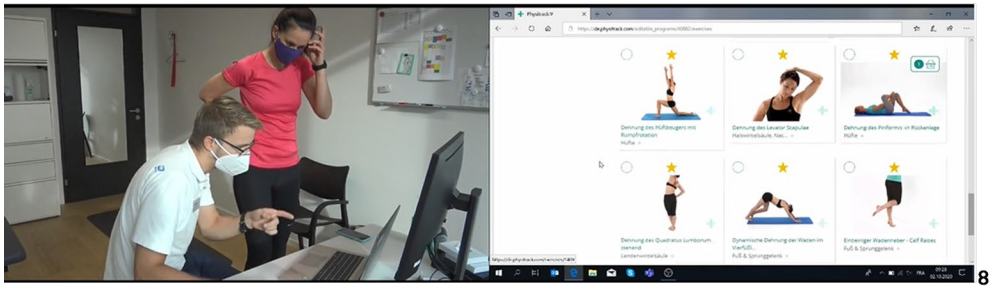
Like in Extract 1d, the patient thus expresses her availability to cooperate with PHYc in the problem-solving task (Kendrick, 2021). And just like PATg's noticing in Extract 1d (l. 25), PATd's comment is produced in a low volume and is barely intelligible. PATd also thus scans the adequacy of an offer of cooperation, instead of directly producing it.

However, in contrast to 1e, in which PHYd solves the problem himself, PHYc produces a method of recruitment as a response to PATd's display of availability and scanning: he makes a trouble report (l. 15–16). The nature of the trouble is shared between Self and Other and thus invites Other to contribute to solving it (Kendrick & Drew, 2016). And indeed, PATd points to one exercise on the screen (l. 20, f. 7), thereby clearly entering into the *trouble zone* (Kendrick, 2021) and engaging with the task at hand. Deploying a low volume and a rising intonation, she proposes a *candidate solution* (Zemel et al., 2009) to PHYc's problem of finding the right exercise (l. 20–21). Unlike PATg in

Extract 1, PATd knows which exercises will be included in her program, as PHYc has already instructed her in the exercises before compiling the program. This *firsthand knowledge* (Heritage, 2012b) seems to increase her entitlement to offer cooperation in problem-solving. Indeed, PHYc acknowledges her offer of cooperation, but rejects the proposed solution.

Extract 2d

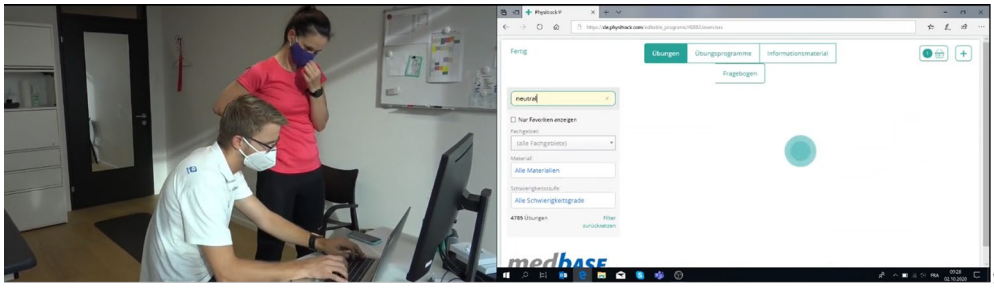
```
22          (0.3)§(0.7)
    patd    >----§
23  PHYc    ¬y:%eah/#¬
            ¬-points to PC1--¬
               %scrolls up->
    img              # figure 8
```



```
24          (.)%
            >--%
25          but that's %not [quite the o]ne that i (0.2)&
26  PATd                    [°(okay)°]
                        %-scrolls up->1.50
27  PHYc    &i'm looking for/
28          (0.4)
29  PATd    ah\
```

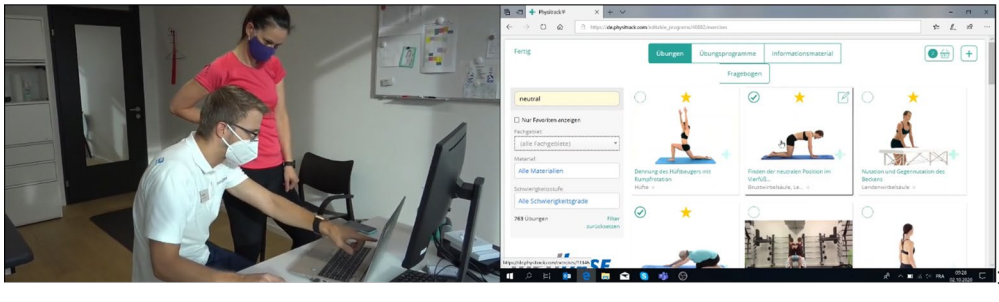
Following PATd's offer of cooperation, there is a considerable pause (l. 22) (Kendrick & Torreira, 2015), during which PATd retracts her hand. Pointing to the screen in turn, PHYc then produces a "yeah but" (l. 23-25, f. 8) that acknowledges PHYc's candidate solution, while also projecting the rejecting account that follows: "that's not quite the one that i (0.2) i'm looking for" (l. 25+27). The account takes a mitigated format and thus indicates a dispreferred action (Kendrick & Torreira, 2015; Steensig & Asmuß, 2005). At the same time, he highlights that he is in charge of providing the solution: he now uses the first person singular "I" while starting to solve the problem of the missing exercise himself by scrolling up again (l. 25).

Extract 2e



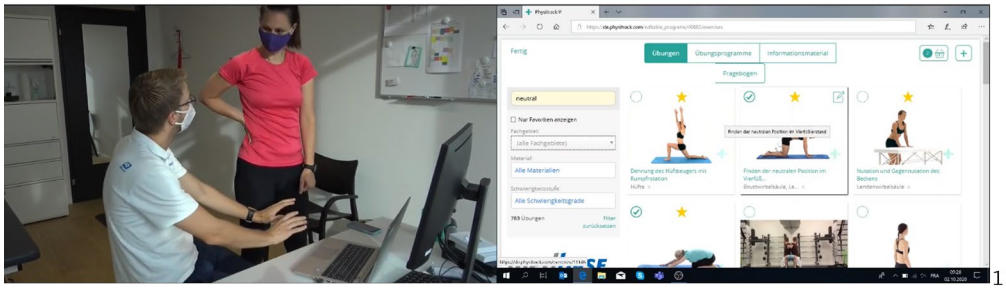
9

```
30          (1.2)%(.)
      phyc  >----%
31  PHYc    u:hm:
32          %(0.7)%(0.4)*(0.9)
            %scrolls to top of page%
                        *sound of scrolling up
33          *(0.8)%(0.7)@(0.4)%#
            *clicks on "search for exercises"
                  %enters "neutral"%
    fig.                    # figure 9
    app                   @loading sign appears
34          (2.6)@*(0.2)@(0.9)%(0.3)%
    app             @list of exercises appears
    phyc             *clicks (on "all areas")
    app                   @small list of areas appears
    phyc                        %moves cursor to upper middle exercise%
35          xx there
36          (0.7)*(0.5)@(0.6)
    phyc            *clicks on exercise
    app                   @green checkmark on exercise
37          okay so ¬that's # (.) that was the¬ one
    phyc              ¬-----points to PC1--------¬
    fig.                    # figure 10
```



10

```
38        ¬(0.3) with $the £setting u#p/
   phyc   ¬-imitates exercise->l.61
   patd   >-----------$-looks at PHYc->
   phyc   >---------------£-looks at PATd->
   fig.                              # image 11
```




```
39        (0.2)
40 PATd   §m[£¬hm/$]
41 PHYc     [£  ¬u$]hm: (0.2) just a (.) a:% straight§ spine/
   patd   §------------------nods--------------------§
   phyc   >--£-looks at PC1->
   phyc   >----¬
   patd   >-------$-looks at PC1->
   phyc                                  %scrolls down->
```

At the beginning of Extract 2e, PHYc scrolls to the top of the page (l.32), enters *neutral* in the search field (l. 33), and chooses one exercise from the list (l. 36) that appears (l. 33–35). Only after selecting an exercise (l. 36) does he address PATd again (l. 37ff.). He explains which exercise he chose and makes a gesture (f. 12), referring to the exercises they had done earlier in the consultation: "that was the one (0.3) with the setting up/ . . . just a (.) a straight spine/" (l. 37–41). While searching for the solution (l. 30–36), PHYc withdraws from interacting verbally with PATd. While the app loads, he stays focused on the laptop (l. 33–34). After acknowledging PHYc's rejection (Extract 2d; l. 26+29), PATd leaves the therapist the space to deal with and solve the tool-related problem. So, during the problem-solving sequence, the verbal interaction between PHYc and PATd is suspended for the sake of problem-solving, which is left to the responsibility of PHYc. The participants mark the end of the problem-solving sequence by gazing at and addressing each other again (l. 37–41).

To sum up: just as in Extract 1, in Extract 2, recruitment methods are organized in ways that reflect different rights and obligations to which the two participants orient with respect to the institutional setting in which the encountered trouble is dealt with. PHYc produces several embodied trouble alerts (Extract 2b, l. 10–13), and there are some rather lengthy silences during which PHYc is observably searching for a specific exercise before PATc produces a preliminary action (Extract 2c; l. 14), first scanning the adequacy of offering cooperation. Only after PHYc produces a trouble report (Extract 2c, l. 15–16) does she eventually propose a candidate solution (Extract 2c; l. 21).

In contrast to Extract 1, PHYc instructs PATd in the exercise before adding it to her program on the app interface. PATd thus has *firsthand experience* concerning the exercises PHYc is to compile for her program (Heritage, 2012b, p. 4). The placement of the exercise compilation within the physiotherapy consultation thus has implications for the participants' rights, obligations, and entitlement to offer cooperation. In line with that, in Extract 2, PHYc utilizes the inclusive "we" to formulate the task at hand from the outset (Extract 2a; l. 2, 6). He only switches to the "I" pronoun (Extract 2d; l. 25+27) when declining PATd's candidate solution (Extract 2c; l. 21). In contrast, PHYd in Extract 1 deploys *I* (Extract 1b; l. 12; Extract 1d; l. 23), switching to the inclusive *we* (Extract 1e; l. 29) merely to formulate the solution while implementing it on his computer.

Physiotherapist: Treated as responsible for problem-solving

In both Extracts 1 and 2, the physiotherapists encounter a problem while compiling their patient's exercise program: PHYd (Extract 1) and PHYc (Extract 2) display troubles finding the right exercise. To solve this problem, both can be observed taking their focus away from the patient, and directing it to the computer screen as they try out different potential solutions (Extracts 1b–1d, Extract 2b). They thus display their orientation to the activity of finding the right exercise as being their task. However, this problem-solving unfolds within a configuration that also includes the present patients who potentially could be recruited to cooperate in finding the right exercise.

Regarding the methods of recruiting assistance in ordinary interaction, studies have revealed a continuum: they range from explicit requests by Self, reports of needs or difficulties, trouble alerts such as response cries, and embodied displays of trouble to trouble that are projectable and can thus be anticipated by Other (see the notion of "anticipatory assistance"; Kendrick & Drew, 2016, p. 9), on the one hand. On the other hand, Others have a wide range of methods for offering assistance: they might display their attention and availability, demonstrate their recognition of Self's trouble, produce embodied trouble alerts or reports, offer candidate solutions that are relevant to implement, or even implement one themselves (Kendrick, 2021). In these different methods, troubles are displayed or explained to different degrees, assistance is made relevant to different degrees, and solutions are proposed by either Self or Other (Kendrick & Drew, 2016).

PHYd's and PHYc's difficulties in finding the right exercises become visible in their display of trouble through embodied actions (Drew & Kendrick, 2018), such as repeatedly using filter and search functions (Extract 1b, l. 8–11), or repeated scrolling (ex. 2b, l.9–13). PHYd (Extract 1b, l. 12) even makes his trouble explicit for PATg through a trouble report (Kendrick & Drew, 2016). Furthermore, PHYd's hesitation markers (e.g., Extract 1c, l. 15) and PHYc's murmured self-talk (Extract 1b, l. 12) can be understood as trouble alerts (Kendrick & Drew, 2016) and thus as another recruitment method.

Looking at the recruitment continuum, it can be conceived that PHYd's and PHYc's ways of manifesting trouble are at the same time the methods listed by Kendrick and Drew (2016) by which Self can recruit Other's assistance, without making it an obligation. Thus, the physiotherapists' conduct makes an offer of cooperation by their patients a potential next step, yet not obligatory. It is also important to note that reports, alerts, and embodied displays are not

necessarily produced in order to get assistance from Other but can also serve other actions by Self (Drew & Kendrick, 2018). Consequently, there is always some uncertainty and latitude of judgment by Other, whether offering assistance is adequate. In the analyzed interactions between therapists and patients, the latter seem to judge their cooperation in the first place as inadequate: upon physiotherapists' focus on their computers, PATg in Extract 1b–d and PATd in Extract 2b both refrain from interacting with the physiotherapists, leaving them the interactional space to solve the task themselves. The patients thus also treat finding the right exercise as the physiotherapists' responsibility, at least up to a fairly advanced point in the examined extracts.

Patient: Scanning adequacy of offering cooperation

However, after the physiotherapists have been manifesting trouble for some time, and after several potential methods of recruitment, both PATg and PATd involve themselves in the course of problem-solving action. PATg (Extract 1d, l. 25) and PATd (Extract 2c, l. 14) produce a barely intelligible utterance. The format of these turns reflects the patients' apparent general reluctance to offer cooperation. It is noteworthy that they do not get involved in a straightforward manner. The patients in Extracts 1 and 2 involve themselves in the course of action of Self, i.e., the physiotherapists, not by offering assistance in the form of proposing a possible solution or implementing it themselves (Kendrick, 2021), but rather by first making explicit that they recognize that there is trouble and that they are following it attentively and then by displaying increased readiness to join in solving it. In this way, they scan whether the physiotherapist accepts their cooperation as adequate. Apparently, the option of cooperation between physiotherapist and patient is not considered as a given from the outset but must first be interactionally established as relevant and adequate.

At this point, the two analyzed situations take different courses: in Extract 1e, PHYd does not invite PATg's cooperation in return, but finds a solution himself. In this specific institutional context, cooperating with PHYd in solving problems related to the computer is not treated as an obligation on the part of PATg. Meanwhile, in Extract 2c (l. 15–16), in response to PATd's comment on the trouble, PHYc produces a trouble report that is taken by PATd as an invitation to cooperate, for she then points to an exercise on the screen (Extract 2c, l. 20–21), thus offering a potential solution to the problem (Kendrick, 2021). Here, finding the right exercise also becomes part of the patient's rights and obligations and the patient actively participates in compiling the exercise program. The difference between the two also stems from the local context of the exercise program compilation: while in Extract 1, PATg and PHYd have not yet looked at the exercise in question, in Extract 2, PHYc has already instructed PATd in it. For this reason, PATd has firsthand knowledge of the exercise and therefore increased entitlement to contribute to finding it (Heritage, 2012b) or proposing a candidate solution.

Conclusion

Our detailed analysis of two extracts looked at physiotherapists' difficulties when accomplishing an everyday work task on their computers in the presence of their patients. We show that such situations seem to be treated as moments in which partnership and cooperation between a healthcare provider and a patient can be es-

tablished as an option, while this is not treated as a given from the outset. Patients are reluctant to offer their cooperation and physiotherapists do not readily accept patients' availability to cooperate in the task at hand, thereby displaying a preference for solving the problem themselves.

In the extracts presented here, recruitments are thus organized incrementally, according to the contingencies of an institutional setting in which participants have different rights and obligations with respect to app-related problems occurring on the physiotherapists' devices. Besides the institutional setting, the ways in which recruitments are conjointly organized are contingent upon the local contexts in which the difficulties with the app occur: for example, PATd in Extract 2 already knows the exercises that PHYc has difficulties finding in the app and is therefore to some extent eligible to cooperate. This observation, although based on a small number of occurrences, might be relevant for practitioners to consider when using apps for program compilation during consultations.

Examining recruitments occurring during physiotherapists' compilation of exercise programs for patients on a computer has allowed us to contribute to the literature on recruitments in institutional interactions, as well as on digital technology as a resource for patient participation in healthcare interactions. So far, research on how recruitments are interactionally organized in institutional settings has been scarce and the question of how problem-solving on a computer is organized when patients are present has not been investigated. González-Martínez and Drew (2021) reveal how in hospital settings, surgery nurses' brief informings via phone calls suffice to solicit cooperation from their nurse colleagues. Similarly, in collaborative writing tasks at a school, students' deployment of embodied recruitment methods, e.g., lifting the pen or the gaze, might engender cooperation from Other (Mlynář, 2022). In both cases, interactants' solicitation and provision of cooperation draw on their shared understanding of the activity at hand (whether routine or not) as implying a division of labor between them.

In a similar vein, research on how tasks and problem-solving on the computer are accomplished between work colleagues, students at school (Due & Toft, 2021; Greiffenhagen & Watson, 2009), or teacher and students in a computer course (Råman, 2022) highlight the fact that participants' organization of tasks and problem-solving reflects their orientation toward the task at hand as involving both a division of labor and cooperation.

In contrast, our detailed analysis of problems occurring in the compilation of exercise programs for patients on physiotherapists' computers shows that the ways that physiotherapists experience difficulties and how patients treat these difficulties are shaped by the contexts in which the problem-solving takes place and also have the potential to renew those contexts (Heritage, 1984), notably with respect to issues around asymmetry between healthcare providers and patients (Drew & Heritage, 1992). On the one hand, the problem of finding the right exercises for patients' home programs is not only occurring on the physiotherapists' work computers and thus handled by the therapists, but is also part of the therapists' epistemic rights and obligations in terms of knowing the right exercises for the patients and finding them. On the other hand, our analysis shows that problem-solving on the computer when compiling exercise programs for patients might be an opportunity to increase patients' involvement in this activity and thus in the therapeutic process, which relies strongly on patients' regular accomplishment of therapeutic exercises at home.

Acknowledgments

Our research project is supported by the *Commission scientifique du domaine santé HES-SO*, Switzerland under grant number: 95846/S-RAD19-04. The requirement for approval was waived (10th of March, 2020) by the Cantonal Ethics Committees of Zurich. All participants signed an informed consent form, agreeing to be video-recorded, and to allow screenshots and transcriptions of video-recordings to be used for scientific publications. Part of this contribution was presented at the 2021 IPrA conference in the panel *Technology use in social interaction: enabling vs. constraining participation*, chaired by Prof. Florence Oloff, Iulia Avgustis, Dr. Samira Ibnelkaid, and Dr. Joonas Råman, on July 1st, 2022 (Schmid et al., 2021). We thank the organizers and participants for their constructive questions and comments.

A special thanks goes to Medbase for the stimulating collaboration, to Veronika Schoeb for her invaluable support and insight throughout the project, and to all participating physiotherapists and patients. Finally, we thank the editors of the Special Issue and anonymous reviewers for their constructive comments.

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OTSIKKO JA ASIASANAT SUOMEKSI:

Digitaalinen teknologia fysioterapiakonsultaatioissa: Ongelmanratkaisujaksot ja avun värvääminen

ASIASANAT: avun värvääminen, etnometodologia, fysioterapeutti-potilas-vuorovaikutus, keskustelunanalyysi, mobiilisovellukset, ongelmanratkaisu

Appendix: Transcription conventions

sign	meaning
(1.0)	pause, measured in tenths of seconds
(.)	brief pause (< 0.2 seconds)
[…]	beginning and end of overlapping talk
°…°	beginning and end of talk in softer sound
>…<	beginning and end of accelerated speech
:	prolongation of the prior sound
/	upward intonation
\	downward intonation
xxx	unintelligible talk
(…)	guessed talk
((…))	transcriber's descriptions of ongoing interaction

Below the transcription lines representing talk (see conventions developed by Jefferson, 2004, above), embodied actions occurring at the same time are represented (see below conventions developed by Mondada, 2018, p. 106).

$	various symbols in the verbal transcript indicate the exact timing, beginning, and end of an embodied action.
$--->	action described continues across subsequent lines (until the same symbol appears again)
>>---	action described begins before the extract's beginning
--->>	the action described continues after the extract's end