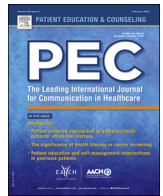




Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou



Discussion

Everyday couples' communication research: Overcoming methodological barriers with technology

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ARTICLE INFO

Article history:

Received 21 April 2017

Received in revised form 12 October 2017

Accepted 26 October 2017

Keywords:

Communication

Technology

Data collection

Caregivers

Home

ABSTRACT

Relationship behaviors contribute to compromised health or resilience. Everyday communication between intimate partners represents the vast majority of their interactions. When intimate partners take on new roles as patients and caregivers, everyday communication takes on a new and important role in managing both the transition and the adaptation to the change in health status. However, everyday communication and its relation to health has been little studied, likely due to barriers in collecting and processing this kind of data. The goal of this paper is to describe deterrents to capturing naturalistic, day-in-the-life communication data and share how technological advances have helped surmount them. We provide examples from a current study and describe how we anticipate technology will further change research capabilities.

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1. Introduction

The home is often a place of privacy, safety, comfort, and control [1] and the center of everyday experience [2]. The home elicits deeply-ingrained behavior patterns, including the flow of everyday activities and interactions [1,3]. Everyday communication at home between intimate partners represents the vast majority of their interactions and can have a cumulative effect on relationship quality and satisfaction. Communication has been called “the common pathway to relationship [functioning]” [4] because it is the means to meet needs and to express intimacy, support, or displeasure (among other relationship processes). Studying everyday communication is important, but because of its continual, incessant nature, it can fade into the background, making it difficult to measure [5].

Studying communication at home becomes especially relevant when the home also functions as a healthcare setting. Effective patient-provider communication has been shown to impact health

outcomes [6] but there has been a shift in healthcare away from inpatient services toward services relying on informal family caregivers at home, especially for longer term care and advanced illness [1].

As healthcare enters the home, roles and routines can shift. In advanced stages of disease, intimate partners often take on more care tasks, blurring the line between partner and provider. This is particularly true for cancer caregivers, who report providing an average of 32 h of care per week, assisting the patient with an average of 2.4 activities of daily living (e.g., bathing) and 4.6 instrumental activities of daily living (e.g., shopping). Over 70% of cancer caregivers report assisting with medical/nursing tasks and over 60% are considered to be in high burden situations [7]. When intimate partners take on time- and emotionally-consuming roles as healthcare providers, it becomes even more important to assess how couples communicate with each other both about care and in general. There is a growing literature on patient-caregiver communication, but much of this work relies on more subjective self-report or interview data, rather than direct observation [8,9] and even less research focuses on naturalistic communication in the home. These limitations can bias research findings.

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Although the home is becoming a more important healthcare context, it is still clearly distinct and deserves more research into the communication content and processes that occur within. Researchers likely have been dissuaded from this research, however, by barriers in collecting, processing, and analyzing data, impediments that technology is slowly overcoming.

Our team is currently conducting a naturalistic, observational study of couples' communication in advanced cancer patients and their spouse caregivers. We have adapted a widely-used analogue conflict discussion task and collect "day-in-the-life" audio recordings, described below. The aim of this study is to identify quantity of total talk, communication content (e.g., whether couples' communication falls in the domains of cancer or their relationship), and communication process (e.g., who initiates exchanges, valence of responses) of advanced cancer patients and spouse caregivers. The goal of this paper is to describe the obstacles to capturing this data and share how technological advances have helped address those barriers in our ongoing study. We also discuss how we anticipate technology will further change research capabilities.

2. Barriers

2.1. Access

The first barrier to day-in-the-life communication research is gaining access to participants at home. In our study, couples are recruited from clinics at a National Cancer Institute-designated Comprehensive Cancer Center; interested couples are offered two options for participation. Those who live within a 1-h drive are offered the option of a home visit; those living further away or who otherwise prefer can do a structured portion of the study at the cancer center, scheduled around other clinic appointments, then are sent home with recording equipment. This allows couples to conveniently participate without necessarily having to invite the research team to their home.

In both the home and clinic visits, participants sit together. After written consent is obtained and questionnaires are completed, the research assistants help set up and explain the recording equipment to participants, including how to turn the recorder on and off. The couple then completes an analogue structured discussion task based on previous research [10], included as a comparison to the unprompted, naturalistic, communication. The task comprises (a) a 10-min neutral discussion (describe your typical schedule for the week) and (b) a 10-min stressor discussion (discuss a cancer-related problem). Although both individuals wear recorders, a third back-up recorder also captures audio data. After each discussion, participants are asked to complete measures rating their emotions as a manipulation check (i.e., the cancer discussion is meant to be more stressful than the schedule discussion).

2.2. Obtaining key communication data

Research has shown that recording does not significantly alter communication or behavior [11–13]. Analogue observations are common ways for researchers to obtain an approximation of naturalistic communication (e.g. [14]). Investigators prompt couples to engage in "typical" discussions, usually around areas of conflict (e.g. [5,15–18]). The benefit is that researchers ensure that some target communication is captured in a convenient way (i.e., when the investigators' video is rolling). Knowing when and for how long the interaction occurs reduces the need for data storage space and simplifies coding. Couples are able to engage in typical discussions [19] and their communication is predictive of relationship outcomes [4].

Although the analogue method works well to study conflict, by design it involves encouraging less frequent, but highly salient, interactions. This is the antithesis of the everyday home environment. Additionally, there is some evidence that interaction in the lab underestimates differences between distressed and non-distressed couples, compared with audio recordings made in couples' homes [20,21]. This approach also assumes that couples would engage in these discussions if unprompted. Yet many couples avoid or withdraw from discussing conflict, which can uniquely impact relationship outcomes [22–24].

To address the limitations to analogue tasks, our study also includes recordings of true naturalistic discussion. Upon completion of the structured discussion task, home visit participants simply keep the recording equipment on after the research staff members leave. Clinic visit participants are sent home with the equipment and select a day (usually within the week) to complete the home, day-in-the-life portion of the study. The research team schedules a reminder call that morning to help set up equipment remotely. For all participants, staff is available to answer questions throughout the day. Participants are instructed to remove and power down equipment (if still on) when they go to bed. Participants are either met at their next clinic appointment (if within the week) by a research staff member to collect the equipment, or are supplied with a pre-paid box to return equipment by mail. Upon receipt, the research staff checks and uploads audio data (by USB) to a secure network drive before deleting files from devices.

Two previously insurmountable barriers to this type research existed until recently. First, recording devices could not be easily carried by participants. Thus, researchers set up stationary recording devices in limited areas within the home, often dining areas [25], instead of on the person. However, participants tend to be mobile and alternate talking with extended periods of silence. Communication that occurred outside of designated areas or while participants were on the move was not captured. Second, device data storage limited the length of recordings. Thus, some studies targeted key times when participants would be more likely to communicate (e.g., mealtimes [26,27]). However, communication that occurred outside the designated times was not captured.

Technological advances have led to smaller, more economical recording devices with greater data storage capacity and battery power, making it possible to capture naturalistic home-based interactions across time. This was often done using Ecological Momentary Assessment (EMA), also called Experience Sampling Method (ESM). Perhaps the best-known tool for collecting EMA audio data is the Electronically Activated Recorder (EAR), which has facilitated many types of naturalistic studies [5] in a variety of settings, including couples in which one partner is diagnosed with cancer [28–31]. The EAR records 30 s of data every 12.5 min across 48 h in the default sampling pattern [32], creating snapshots of everyday life. The goal of this approach is to balance the desire to capture more data and the resources required to analyze it. EMA can provide excellent information about everyday activity, social interaction, and self-reported psychological states [33]. Using "thin slices" of communication has been shown to have good predictive validity when compared to full samples in a variety of contexts, with the caveat that more or larger slices usually provide more predictive capability [34–37].

Despite the gains made to ecological validity using EMA methods, there are occasions in which the simplification of the approach limits the ability to fully answer research questions, such as when the phenomenon of interest involves potentially infrequent, spontaneous behavior. Although the EAR can capture somewhat low base-rate behaviors such as laughing or singing [5], there are even less frequent behaviors that may be missed completely using this data collection approach. For example, in our

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