The Perils of Online Health Information in Physician–Patient Interactions

(OnlineInfoArztKomm**)**

Projektbeteiligte
Konsortialführung: Gianfranco Walsh (Marketing, LUH)
Projektleitung: Annika Herr, Arndt Reichert
Projektpartner: tba

Projektträger, Laufzeit und Mittel
Projektträger: DFG (HE 6825/6-1 und RE 3562/7-1)
Zeitraum: Okt 2024-Sept 2027 (CHERH: 12 Monate, Vorbereitungen ab Mai 2025)
Förderumfang: €328.000 (Förderanteil CHERH: €93.000)

Projektziele

The proposed research focusses on the online health information-infused interaction between physician and patient. In the first two parts of the project, Gianfranco Walsh will establish two new measures (Physician appraisal of OHI presented by patients (PAOHI) and Patients' perceived appropriateness of physician's response to OHI (PPAPR)). These will be used in the third part as two of the outcomes addressed in the experiment by Annika Herr, Arndt Reichert, and Gianfranco Walsh. A physician's response to OHI is within her/his realm of control. This project aims to show that PAOHI and PPAPR should be included in healthcare organizations' management decisions, especially those pertaining to the structure, timing, and quality of appointments (consultations). Considering how often people interact with physicians, especially in ambulatory care, providers must find ways to manage PAOHI and PPAPR.

Hintergrund und Projektbeschreibung

The "field in the lab" experiment seeks to embed our newly developed PAOHI and PPAPR measures in two nomological nets of outcome constructs, pertaining to physicians and patients (Figure 2). We aim to investigate how physician- and patient-related outcomes of PAOHI and PPAPR (number of physicians = 192 and number of patients = 576) are shaped by OHI.

In the experimental study, PAOHI and PPAPR will be measured after manipulating patients' sharing of OHI with physician and after measuring physician responses (e.g., time investment, choice of diagnosis). To ensure experimental validity, we will carry out a laboratory experiment that induces variation in the access to "good" and "bad" online health information, subject to approval by an internal review board. While examples for the former were provided above, examples for the latter include websites with potentially misleading and harmful health information such as *krank.de*, *doctip.de*, and *zentrum-der-gesundheit.de.*

OHI is expected to differentially affect the PAOHI depending on the quality of the source for two reasons. First, it is likely that physicians reject low-quality or questionable OHI presented by medically illiterate patients. Second, bad (vs. good) online health information is more likely to reduce the physician's sense of lack of control given the possible discrepancy in the assessment of the health situation between the physician and the patient and, consequently, reduces the prospects of desirable situational outcomes.

More detailed information on the lab experiment for interested readers:

We recruit students at the LUH to serve as patients in our experiment using the Leibniz Labor für experimentelle Wirtschaftsforschung (https://www.experimente.uni-hannover.de). We will then include medical students (n = 192 observations, i.e. a 3:1 ratio) of the MHH (medical school Hannover https://www.mhh.de) who serve as physicians using the mobile computer lab.

Patients will randomly receive one out of three standardized texts. Each will present a current medical condition including a set of relevant symptoms (core symptoms) that, in combination, unambiguously point to a disease that implies a specific diagnosis and treatment recommendations. Here, we will draw from existing examples (e.g. Centola et al. 2021) and discuss with medical experts. Yet, the texts will additionally include several symptoms that are unrelated to the disease making the identification of the medical issue noisy (noise symptoms). For this, at the patient-level, we will randomly choose from a list of unrelated symptoms.

Next, the patients will be asked to describe their health concerns to the physician in writing. Depending on the type of OHI, patients are expected to emphasize different aspect of their current medical conditions including the noise symptoms and to ask for different medical treatments.

Physicians provide initial clinical assessments and treatment recommendations. In our economic experiment, we follow previous literature (e.g. Brosig-Koch et al. 2017) to induce a trade-off between high-quality care and costs. Physicians are remunerated based on stated levels of patient satisfaction as a proxy for the willingness to return in the future, and diagnosis accuracy. At the same time, they face costs that linearly increase with time spent for a patient. Thus, when making decisions, the physician simultaneously determines her own profit and the health benefit of the patient. We furthermore set incentives for patients to be cooperative with the physician. Specifically, they receive monetary rewards that depend on the fit of the recommended treatment by the physician to the patient's need given the correct diagnosis. We will develop the experimental setup by conducting additional interviews with general practitioners (n = 10 observations) and jointly developing the descriptions of symptoms and treatment options (similar to Crawford et al. 2021). We will also pre-test how patients (n = 10 observations) access OHI and do consultations in writing and how the medical students (n = 10 observations) make their initial clinical assessments and treatment recommendations to optimally generate the experimental setup.

In the empirical analysis, we will use as key outcome variables PAOHI and PPAPR, the observed physician decisions (time investment, diagnoses, recommended treatment) and patient behaviors including the effort to describe their health concerns (e.g. time investment) and interest in treatment compliance. We will also employ standard text analyses tools to capture the symptoms, possible diagnoses, and treatments sought by the patients in their description of their health concerns.

These data will allow us to examine the ways in which the two forms of OHI enter into the patients' presentation of their health concerns during a doctor's appointment and to make comparisons to the base group without OHI. Moreover, we assess the extent to which these forms affect physician time investment into a patient case, diagnostic accuracy, and treatment recommendations. Eventually, we analyze their effects on the physician's appraisal of the interaction and the patient's perception of the physician consultation. In addition, among those receiving any OHI, we will examine the effects of high versus low-quality exposure on the physician's appraisal of OHI (PAOHI) and the patient's perceived appropriateness of physician response (PPAPR) to OHI.

Figure 2. Conceptual Model