



## Assessment

# The German version of the Four Habits Coding Scheme – Association between physicians' communication and shared decision making skills in the medical encounter



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## ABSTRACT

**Objective:** To translate a measure of physicians' communication skills, the Four Habits Coding Scheme (4HCS), into German, to examine its psychometric properties, and to analyze its association with the OPTION Scale, which assesses physicians' shared decision making (SDM) behavior.

**Methods:** We performed a secondary data analysis of 67 audio-recorded medical consultations. Reliability, internal consistency, and factorial validity of the translated 4HCS were analyzed. The association with the OPTION Scale was examined using correlation and linear regression.

**Results:** Testing of reliability revealed intraclass correlation coefficients above .70. Results regarding internal consistency and factorial validity were inconclusive. The correlations between the OPTION score and the four dimensions of the 4HCS were .04 ( $p = .782$ ),  $-.14$  ( $p = .303$ ),  $-.15$  ( $p = .279$ ) and .55 ( $p < .001$ ), respectively. In multiple regression the four dimensions of the 4HCS explained substantial amount of variation in the OPTION scores ( $R^2 = .42$ ,  $P < .001$ ).

**Conclusion:** The measure showed good observer reliability, however further testing is necessary. Due to the strong interrelation of both measures, SDM should be seen in the context of broader communication skills.

**Practice implications:** The 4HCS can be used in research and medical education. Further studies are necessary that investigate SDM within the context of communication skills.

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## 1. Introduction

Patient–physician communication plays a central role in health care. Beside medical knowledge, problem solving competence, and physical examinations, communication skills are part of the core competences of physicians [1]. Studies have shown that good communication skills of physicians are associated with higher treatment adherence of patients [2] and increased patients' satisfaction with care [3]. Effective patient–physician communication has also been shown to have an impact on health outcomes [4,5]. As a result, communication skills gained in importance in medical education over the last decades. In many medical schools communication skills trainings are well established (e.g., [6,7]). One approach that has been used extensively to teach

communication skills in the US and Norway is the Four Habits Model, which is an approach to the medical interview developed from a synthesis of research evidence, as well as clinical and teaching expertise [8–11]. It describes clusters of physician communication behaviors and skills [10]. The model reflects a patient-centered approach to health care [12]. Within the model four different families of communication skills are clustered into a logical structure: (1) “Invest in the Beginning”, (2) “Elicit the Patient's Perspective” (regarding his or her problem and its impact on his or her life) (3) “Demonstrate Empathy”, and (4) “Invest in the End”. The Four Habits Coding Scheme (4HCS) [13] is a measure of physician behavior developed on the basis of the Four Habits Model. It assesses physicians' communication skills from an external rater's perspective and consists of 23 items. The 4HCS is different from existing rating scales in the way that it assesses communication skills in more detail than other tools used in medical education (e.g., the Maastricht History Taking and Advice Checklist, MAAS [14]) by rating performance rather than frequencies of behavior, but less time-consuming than some of the very elaborate instruments developed for research purposes (e.g., Roter

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Interaction Analysis Scheme, RIAS [15]). Thus, it may fit to both settings [13]. Psychometric testing of the scale has shown acceptable inter-rater reliability, as well as evidence for construct validity [13]. Comparably positive results were found in a study investigating the psychometric properties of the Norwegian version of the 4HCS [16]. Up to this date, no psychometrically tested and authorized German version of the scale was available.

In the last years, the concept of shared decision making (SDM) has gained in importance in health care. It has been shown that SDM strategies, such as decision support interventions, increase the patients' knowledge regarding treatment options, create a more accurate perception of benefits and risks, reduce decisional conflict, and increase the participation of patients in the decision-making process [17]. As a result, policies to promote SDM have been increasingly established [18]. Furthermore, it has been postulated that there is an ethical imperative for SDM, emphasizing each patient's fundamental right of being engaged in decision making concerning his or her health [19,20].

In their recent commentary, Matthias et al. [21] point out that the critical role of the patient-clinician-relationship has been neglected in the literature on SDM. They note that most measurement scales in SDM, like the often used OPTION Scale [22], focus exclusively on the decision making process within the consultation. They argue that SDM should be investigated by taking into account the entire clinical encounter and the communication within this encounter. They hypothesize that if the clinician "invests in the beginning", as described in the Four Habits Model, it is more likely that the decision making process will be shared later on in the consultation (described in the model as "invest in the end"). This importance of building a relationship in order to engage in decision making has also been highlighted by Epstein and Gramling [23].

Thus, the first aim of this study was to translate the Four Habits Coding Scheme into German and to examine its psychometric properties. The second aim of this study was to investigate the association of physicians' communication skills (assessed by the 4HCS) and the extent to which they involve patients in the decision making process (assessed by the OPTION Scale).

## 2. Methods

### 2.1. Participants and procedure

We performed a secondary analysis of a data set that was obtained in an outpatient care sample of a cross-sectional study. It was collected between August 2009 and September 2010 in Hamburg, Germany. The data set consisted of 67 audio-recorded primary or specialty outpatient patient-physician-consultations (either first or follow-up consultations), in which a medical decision was taken regarding either type 2 diabetes, chronic back pain or depression. Eligible patients were enrolled consecutively by their physician. Demographic information was collected by a patient questionnaire. Clinical data were assessed by a physician and documented in a structured form. The main aim of the project in which context the present study was performed was to examine the psychometric properties of the 9-item Shared Decision Making Questionnaire. Detailed methodology and results of this study are reported elsewhere [24,25].

### 2.2. The Four Habits Coding Scheme (4HCS)

#### 2.2.1. Description of the measure

The 4HCS consists of 23 items and assesses physicians' communication behavior from an external rater's perspective.

Rather than focusing on frequency counts of behavior, each item of the 4HCS can be rated on five levels of performance, i.e., on a 5-point Likert scale ranging from 1 = "not very effective" to 5 = "highly effective" [13]. The first dimension "Invest in the Beginning" consists of six items on rapport building, eliciting of the patient's concerns, and planning of the consultation with the patient. The second dimension "Elicit the Patient's Perspective" includes three items regarding the patient's ideas, eliciting specific requests, and exploring the impact on the patient's life. The third dimension "Demonstrate Empathy" includes four items about being open to the patient's emotions, making empathic statements, conveying empathy nonverbally, and being aware of one's own reactions. The fourth dimension "Invest in the End" with ten items includes delivering diagnostic information, providing education, involving the patient in making decisions, and completing the visit [9,13]. A total score for each dimension can be calculated by summing the scores of all items of that dimension. Higher scores indicate better performance.

Dimensions and items of the 4HCS are displayed in the left column of Table 1. One item of the dimension "Demonstrate Empathy" assesses nonverbal communication ("Displays effective nonverbal behavior"), which includes voice tone and body language. The latter could not be assessed in this study, as the consultations were audio-taped only. However, the item has been part of the translation process (see Section 2.3).

#### 2.2.2. The German version of the 4HCS

The translation was performed in a standardized translation and back-translation process [26]. First, the coding scheme was translated from English into German independently by two of the authors (JN, SP). Second, the two translations were discussed (by JN, SP, and IS) until a consensus was reached on the final wording of the German items. Third, a professional translator (blind to the original English version) translated the items back into English. Finally, one of the developers of the original 4HCS (EK) compared the back-translation to the original version. Subsequently, the English coding manual was translated into German.

Whenever an instrument is used in a new language or a different country, psychometric properties should be (re-)established [27]. Correspondingly, we analyzed inter- and intrarater reliability and internal consistency of the German 4HCS. Furthermore, a pilot testing of factorial validity was done. To test inter-rater and intra-rater reliability, intraclass correlations for absolute agreement were calculated in a two-way mixed effects model, i.e., ICC (3,1) according to Shrout and Fleiss [28]. Internal consistency of the 4HCS was assessed by calculating internal consistency (Cronbach's  $\alpha$ ) for the four dimensions and by computing difficulty (mean response) and discrimination (corrected item-total correlation) parameters for each item. For these analyses, scores of items that were rated by two raters (4HCS, OPTION) were calculated by averaging the two ratings. To test factorial validity, pairwise correlations between items and between dimensions were investigated. Statistical analyses were performed using PASW Statistics 18 (IBM Corp., Armonk, NY).

### 2.3. The OPTION Scale

The OPTION Scale consists of 12 items and assesses shared decision making (SDM) behavior of the physician in a consultation from an external rater's perspective. Each item can be rated on a 5-point Likert scale ranging from 0 = "the behavior is not observed" to 4 = "the behavior is exhibited to a very high standard". The German version of the OPTION Scale was used in this study [22]. The content of the OPTION Scale is displayed in Table 2.

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