

PHYSICIAN BEHAVIORAL ADAPTABILITY

How physicians' tailoring of behavior to each patient's preferences
is related to positive consultation outcomes

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Physician behavioral adaptability.

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ABSTRACT

Since the emergence of Engel's biopsychosocial model, communication between patient and physician has gained significant attention. The wealth of research on the subject shows that the quality of physician communication affects consultation outcomes. Nowadays, the advised approach in patient-physician communication is patient-centeredness. The primary goal of patient-centeredness is to provide customized care to each patient's specificities. While the literature so far investigated the effectiveness of patient-centeredness by measuring a set of definite behaviors, a study of patient-centeredness more suitable to its fundamental purpose would be to test how physicians' tailoring of behavior to each patient's preferences is related to consultation outcomes. The present work aims to study this process called physician behavioral adaptability.

A model of physician behavioral adaptability is proposed. It conceptualizes how physicians infer the patients' preferences to then flexibly adapt their behaviors accordingly. The model posits that if the physician's behaviors then match the patients' preferences, more positive consultation outcomes will emerge. Parts of the model are supported by the literature review of Article 1. Articles 2 and 3 both tested the validity of the physician behavioral adaptability model in the field. First, we demonstrated that the more physicians displayed dominance nonverbal behaviors toward a patient preferring more dominance (compared to patient preferring less dominance), the more positive the consultation outcomes. In Article 3, we showed that better emotion recognition skills are related to more behavioral adaptability, but only for female physicians. Results also showed that female physicians' behavioral adaptability regarding nonverbal affiliation and dominance is more related to positive consultation outcomes for the patients than displaying high levels of affiliation and low levels of dominance regardless of patients' preferences. Therefore, a set of defined nonverbal behaviors applied to every patient is not the best approach to achieve positive consultation outcomes.

In the discussion, the contribution, practical implications, and limitations of the present work are presented as well as the future and promising perspectives for the concept of behavioral adaptability.

Keywords: Patient-physician communication, patient-centeredness, physician behavioral adaptability, physician behavior, patient preferences, consultation outcomes.

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1 INTRODUCTION

Physician-patient interaction is one of the most complex human relationships. It usually implies vital issues or at least well-being issues and therefore carries high emotional valence. Because of this affective facet, the art of medicine have become twofold: mastering the technical aspect of the healing process (the cure) on one hand and the ability to communicate appropriately with the patient (the care) in the other (De Valck, Bensing, Bruynooghe, & Batenburg, 2001).

The present work focuses on the care and communication part of physician-patient interaction. This aspect gained much attention during the last decades and research shows that communication indeed affects consultation outcomes. Nowadays, the recommended communication approach is patient-centeredness, recognized as beneficial for both the patient and physician (Roter, 2000). However, we posit that the literature presents a misconception of patient-centeredness that leads to an inaccurate assessment of it. Indeed, patient-centeredness' primary aim is – as its name suggest – to place the patient at the center of the consultation. Compared to a doctor- or a disease-centered approach, patient-centeredness implies treating the patient as a whole and unique human being. As such, the care must be tailored to the specific perspectives, needs, and preferences of each patient. Thus far, patient-centeredness has been measured as a set of behaviors, such as maintaining eye contact, nodding, avoiding interruptions, eliciting patient emotions, or providing clear, jargon-free explanations (Epstein & Street, 2007). These behaviors can be defined as positive, because they are overall linked to better consultation outcomes for the patient (Mead & Bower, 2002; Stewart, 1995), but they cannot be labeled as patient-centered. Setting a list of behaviors to all patients ignores the adaptation of care to each patient's uniqueness as implied in the patient-centeredness core definition. The aim of the present work is to investigate this ignored aspect of patient-centeredness. It puts forward a new conception of physician communication: physician behavioral adaptability defined as physicians' ability to tailor their behaviors according to each patient's preference.

In this dissertation, I will first discuss the importance and some conceptual aspects of the physician-patient communication. I will then introduce the patient-centered approach and underline the misconceptions presented in the literature on the subject. The concept of physician behavioral adaptability will then be proposed as a more suitable operationalization of patient-centeredness. After reviewing the communication theories

that conceptualize the adaptation of human behavior, I will present the proposed model of physician behavioral adaptability (Article 1). Then, two studies that tested the effectiveness of the model will be summarized (Articles 2 and 3). I will finally discuss some gender issues in physician-patient communication (Book Chapter) before giving a general discussion of this work. This conclusive part will present the contribution of the present work and its practical implications, discuss its limitations, and propose avenues for future application of the concept of behavioral adaptability.

2 PHYSICIAN-PATIENT COMMUNICATION

Until the sixties, the prominent approach of medicine was a biomedical one that considered the patient as a broken or dysfunctional body in need of repair. This approach is disease-centered, because it is the disease that is solely taken care of and not the patient in its entirety. As noted by Engel (1977), this model is reductionist, dehumanizing, and does not account for the reality of a disease that would inevitably involve the patient as a whole and not only his or her body. The biopsychosocial model has thus been proposed as a more holistic and comprehensive model of medicine (Engel, 1977). It attributes the causes and the outcomes of the disease to a complex combination of biological, individual, and social variables. Consequently, the body of the patients is seen as important as their inner world and their social environment.

From this shift in the conception of medicine, more attention has been spent on the aspects of medical encounters that would help implement this more humanized perspective of healthcare. This implied the study of physician-patient communication and its effectiveness that gained further attention. Nowadays, the communication between physicians and patients is unquestionably seen as important. A significant number of studies have indeed shown that physician communication affects patient outcomes. For instance, Stewart's review (1995) of articles between 1983 and 1993 shows that communication between physician and patient is related to better health outcomes regarding physiologic status, symptom resolution, and emotional status. A meta-analysis of studies between 1949 and 2008 also showed that communication style is related to adherence and that physicians training in communication skills enhance the patients' adherence to the treatment (Haskard Zolnieriek & DiMatteo, 2009). Another meta-analysis of randomized controlled trials studies (RCTs) between 1947 and 2012 showed that the physician-patient type of relationship has a small ($d = .11$) but significant impact

on objective or validated subjective healthcare outcomes (Kelley, Kraft-Todd, Schapira, Kossowsky, & Riess, 2014). RCTs are interesting, because they not only test the relationship between two variables, but imply causality (Antonakis, Bendahan, Jacquart, & Lalive, 2014). Therefore, this meta-analysis not only implies a link between communication and interaction outcomes but also shows that good communication between physician and patient actually brings more positive consultation outcomes. Consequently, research on physician-patient communication and how to improve it is highly valuable. It would indeed afford new avenues for medical training that will improve patients' well-being. The present work is in line with this prospect. Its goal is to propose and test a new conception of physician communication posited as more beneficial than the current trend in patient-physician communication studies.

When studying the effectiveness of physician-patient communication, some methodological choices must be made. First, one has to decide which outcome of communication to assess, then the behaviors to focus on should be defined, and finally tools or techniques to measure them must be selected.

2.1 PHYSICIAN-PATIENT COMMUNICATION OUTCOMES

The first aim of physician-patient interactions is the well-being of the patient. As such, consultation outcomes are generally used as dependent variable of physician-patient communication studies. Outcomes of medical encounters have been defined as "an observable consequence of prior activity occurring after an encounter, or some portion of the encounter, is completed" (Beckman, Kaplan, & Frankel, 1989, p. 224). Different variables have been used to measure such outcomes in physician-patient interaction. Beckman et al. (1989) propose to classify them into three categories: long-term, intermediate, and short-term outcomes. Long-term outcomes are the most direct, factual, and objective measurement of consultation outcomes. They designate the evaluation of the symptom resolution, health status, quality of life, or mortality of the patient. The intermediate outcomes are those that will potentially lead to a long-term improvement of patients' health and well-being, such as compliance with the physicians' recommendations and prescriptions. Short-term outcomes are the most often used consultation outcomes, because they are easier to measure in term of time and facilities needed. Short-term outcomes include satisfaction with the visit, trust in the physician, information recall, or adherence intention. As quick and dirty as the short-term outcomes

might seem, they are not without consequences for the patients' well-being. For instance, satisfaction is a good proxy for patients' long-term outcomes as it has been showed to be linked to less compensation for inability to work (Wickizer et al., 2004) and better quality of life of renal transplantation patients (Yildirim, 2006).

2.2 VERBAL AND NONVERBAL BEHAVIORS

When studying the impact of physician-patient communication on consultation outcomes, several aspects of physician-patient communication can be targeted. Thus far, researchers mostly focused on verbal behaviors. The information giving and the treatment decision process are indeed two central components of medical encounters that are mostly displayed through language. Many verbal behaviors have been shown to be related to more positive consultations outcomes, such as “empathy, reassurance and support, various patient-centered questioning techniques, encounter length, history taking, explanations, both dominant and passive physician styles, positive reinforcement, humor, psychosocial talk, time in health education and information sharing, friendliness, courtesy, orienting the patient during examination, and summarization and clarification” (Beck, Daughtridge, & Sloane, 2002, p. 25). The verbal behaviors are thus of undisputable importance. However, substantial factors regarding the medical interaction, such as emotions, are mostly related to nonverbal communication (Roter, Frankel, Hall, & Sluyter, 2006). Consequently, in the last decades, the importance of nonverbal behaviors has been underlined by several authors (Ong, De Haes, Hoos, & Lammes, 1995; Schmid Mast, 2007). Nevertheless, research on the effect of nonverbal behaviors is still scarce. Among the 22 studies of behaviors during medical interactions systematically reviewed by Beck, Daughtridge, and Sloane (2002), only 8 explored nonverbal behaviors. Thus far, the studies on nonverbal behaviors in physician-patient interaction showed that “head nodding, forward lean, direct body orientation, uncrossed legs and arms, arm symmetry, and less mutual gaze” are linked to more positive consultation outcomes (Beck, et al., 2002, p. 25). The impacts of nonverbal aspects of medical encounters should thus not be set aside.

2.3 CONTROL AND AFFILIATION BEHAVIORS

One way to conceptualize physician-patient communication to include both verbal and nonverbal behaviors is to conceive them according to different dimensions of human interaction. The affiliation and control dimensions of the interpersonal circumplex model

(Kiesler & Auerbach, 2003) have been often applied to the physician-patient communication. Affiliation corresponds to the so-called horizontal dimension of human interaction that goes from hostility to friendliness. It designates the degree of warmth of the behaviors displayed. Typical affiliation behaviors are for instance greetings, humor, compliments, open arm posture, softer tone of voice, or forward lean (Kiesler & Auerbach, 2003). The control dimension is also called the vertical dimension of human interaction and represents how dominant or submissive the behaviors are. Behaviors related to the control dimension are for instance critiques, contradiction, talking down, visual dominance (gazing while speaking, but not gazing while listening), interruptions, or quick and loud vocal tones (Kiesler & Auerbach, 2003).

In the physician-patient interactions these two main dimensions have been also called caring and sharing (Krupat et al., 2000). The caring dimension is the extent to which the physician shows warmth, concern, empathy, and exploration of the psychosocial aspect of the patient's disease. The sharing dimension refers to how much the physician controls the agenda of the consultation, provides information, and negotiates the decisions with the patient. A physician showing a low level of sharing by displaying dominance behaviors and not including the patient as an active partner in the medical interaction is called "paternalist". This medical interaction style has been the predominant one for centuries (Roter & Hall, 2006). However, nowadays, a shift of power from more passive patients to more mutuality between patients and physicians (i.e., more sharing) is recommended (Stewart et al., 1995). Indeed, studies show that on average physicians displaying more sharing and caring behaviors have patients with more positive short-term (Beck, et al., 2002) as well as long-term consultation outcomes (Stewart, 1995).

2.4 ASSESSING PHYSICIAN-PATIENT COMMUNICATION

In order to standardize the assessment of behaviors in patient-physician communication studies, several interaction analysis systems have been created and well validated. The Bales' Interaction Process Analysis (BIPA; Bales, 1950) has been first designed for research in small group discussion. It is thus not specific to clinical situations. It enables the classification of every behavior that can be observed into 12 mutually exclusive categories related to information exchanges. The Roter Interaction Analysis System (RIAS; Roter & Larson, 2002) is an analysis system based on the

principles of the BIPA, but designed specifically for medical interactions. It encompasses 37 mutually exclusive categories to which every patient's and physician's utterance (small speech segments) is assigned. These categories go from more socioemotional behaviors (i.e., empathy, laugh, partnership, show criticism) to more task-focused ones (i.e., information giving, asking questions, counseling). The RIAS is, nowadays, the most commonly used interaction analysis system in physician-patient interaction. Unlike interaction analysis systems created for a particular medical specialization like the Brown University Interpersonal Skill Evaluation (BUISE; Burchard & Rowland-Morin, 1990) for patient-surgeon interaction or the Physician Behavior Checklist (PBCL; Blanchard et al., 1983) for oncologist-patient short encounters, the RIAS can be applied to every medical specialization. Another category of interaction system that can be applied to every medical specialization is the systems derived from the currently predominant approach in the physician-patient field: the patient-centeredness approach.

3 PATIENT-CENTEREDNESS

The literature on patient-centeredness is abundant, and this approach is nowadays recommended for achieving high-quality medical care (Institute of Medicine, 2001). However, the authors are inconsistent in their definition of the concept (Epstein et al., 2005; Mead & Bower, 2002; Mead, Bower, & Hann, 2002). As shown in Table 1, patient-centeredness is overall defined as a multidimensional concept, but the number of dimensions as well as their content differs from one author to the other. Some aspects such as sharing information or fostering the patients' active participation are present in most of the definition of patient-centeredness. However, other dimensions, such as "being realistic about time and resources" or "creating a therapeutic alliance" are considered as essential to patient-centeredness by very few authors.

Therefore, if most of the authors agree that patient-centeredness is important for effective communication, the concrete definition of what is or what is not part of patient-centeredness is still unclear. Moreover, the dimensions of patient-centeredness described in the literature are vague and the physician's behaviors they correspond to are unclear (e.g., "viewing doctors as persons" or "managing uncertainty"). As a consequence, the operationalization of physician's patient-centeredness represent a challenge and the ways to measure it are as diverse as its definitions.

Table 1. Four examples of patient-centeredness definitions

Author	Dimensions of patient-centeredness
Mead & Bower (2000b)	1. Having a biopsychosocial perspective 2. Seeing patients as persons 3. Sharing power and responsibility 4. Creating a therapeutic alliance 5. Viewing doctors as persons
Roter (2000)	1. Medically functional 2. Informative 3. Facilitative 4. Responsive 5. Participatory
Stewart (2003)	1. Exploring the disease and illness experience 2. Understanding the whole person 3. Finding common ground regarding management 4. Incorporating prevention and health promotion 5. Enhancing the patient-doctor relationship 6. Being realistic about time and resources
McCormack et al. (2011)	1. Exchanging information 2. Fostering healing relationships 3. Recognizing and responding to emotions 4. Managing uncertainty 5. Making decisions 6. Enabling patient self-management

3.1.1 The operationalization of patient-centeredness

For instance, the Euro-Communication Scale (Mead & Bower, 2000a) is used to rate the physicians' behaviors regarding the following items: involving the patient in the problem definition as well as in the decision-making process, picking up cues from the patient about "hidden" aspects, exploring issues of patient ambivalence and self-efficacy, and the physician's overall responsiveness. Each item is rated on a scale from 0 (poor) to 5 (excellent) and a mean is then computed.

Another analysis system, the Measure of Patient-Centered Communication (MPCC; J. B. Brown, Stewart, & Ryan, 2001), evaluates three components: (1) exploring the disease and illness experience measured as the physician's response ("cutoff," "preliminary exploration," "further exploration," or "validation") to patient's statements about symptoms, feelings, ideas, expectations, and functioning; (2) Understanding the whole person assessed as physician's responses to patient's psychosocial information and concerns; and (3) finding common ground evaluated with the physician's discussion of

roles, goals, and treatment. The total MPCC score is then computed as the mean of the three component scores ranging from 0 (not patient centered) to 1 (very patient centered).

Several authors also used some of the RIAS categories to operationalize physicians' patient-centeredness. Mead and Bower (2002) propose measuring their five dimensions of patient-centeredness with the following RIAS categories: all physicians' psychosocial and lifestyle questions for assessing the biopsychosocial perspective, all patients' utterance (excluding agreements) as well as all physicians' biomedical information-giving and clarifications to measure sharing of power and responsibility, and all physicians' social talk and expression of reassurance as well as a global rating of physicians' warmth and interest to evaluate the therapeutic alliance. Likewise, Ford, Fallowfield, and Lewy (1996) propose a patient-centered ratio that divides the patient-centered RIAS categories (e.g., empathy, approval, partnership) by categories more related to doctor-centeredness (e.g., criticism, closed-ended medical questions).

3.1.2 Limitations of the usual patient-centeredness operationalization

The so-called "patient-centered" behaviors measured by these analysis systems can be categorized as high in caring and sharing, because they emphasize warmth and partnership. As such, they can be defined as positive on average, because caring and sharing is usually related to more positive outcomes (Beck, et al., 2002; Stewart, 1995). However, the studies measuring the relationship between such behaviors and consultation outcomes showed inconsistent findings with some being related to more positive outcomes and others not being related to patient outcomes (Mead & Bower, 2002; Mead, et al., 2002).

Moreover, other studies showed that not every patient benefits from the conventional behaviors advised by the patient-centeredness literature. For instance, Graugaard and Finset (Graugaard & Finset, 2000) have shown that moderately anxious patients were less anxious when interacting with physicians showing more patient-centeredness, but more anxious patients' levels of anxiety increased when facing the same kind of physicians. Similarly, It has been demonstrated that the more anxious the patients are, the more they tolerate physicians perceived as angry (Hall, Roter, & Rand, 1981) or dominating (Street & Wiemann, 1987). Cousin and Schmid Mast (2013) also showed that, compared to less agreeable patients, patients rating high in agreeability benefit more from physicians who display affiliative nonverbal communication style

(e.g., looking at patient, smiling, nodding). Similarly, Physicians benefit from more positive outcomes when their communication style is congruent with the one desired by the patients (Cousin, Schmid Mast, Roter, & Hall, 2012). These results suggest that there is no “one size fits all” communication style for medical encounters. Indeed, all patients are unique and their preferences concerning medical interaction style vary from one patient to the other. For instance, it has been showed that some patients prefer dominant or paternalist physician whereas others do not (Gattellari, Butow, & Tattersall, 2001; Guadagnoli & Ward, 1998).

Defining a certain set of behaviors as being overall beneficial seems thus questionable. Furthermore, if we take a step back and look at the emergence of patient-centeredness, we realize that operationalizing patient-centeredness in term of behaviors to display toward every patient goes against its primary purpose.

3.2 EMERGENCE OF THE PATIENT-CENTEREDNESS APPROACH

The emergence of the concept of patient-centeredness is closely related to the shift from a biomedical approach to the biopsychosocial model. As the biopsychosocial model, patient-centeredness emerged to remedy the limitations of a disease-centered approach. Considering the patients in their entirety and uniqueness is thus at the basis of the patient-centered approach. Patient-centered physicians will thus incorporate the body, the inner world, and the social context of the patients in their care.

Moreover, patient-centeredness has also been conceived in opposition to the doctor-centered approach that gave more importance to the physician directives, conceptions, and perspective than to the patients'. The implementation of patients' rights, the emergence of autonomy in western civilization, and the development of psychotherapy where patients' inner world is at the heart of the interaction fostered a shift of focus in physician-patient interactions. As its name suggest, the aim of patient-centeredness is to place the patients and their perspectives, needs, and preferences at the center of the medical encounter. Thus, the physician goal should be “to enter the patient's world, to see the illness through the patient's eyes” (McWhinney, 1989, p. 111). The goal of medical interaction is not only to diagnose and treat a disease, put to see it from the perspective of the patient. Patient-centered is indeed understood as “health care that is closely congruent with and responsive to patients' wants, needs, and preferences” (Laine & Davidoff, 1996, p. 152).

3.3 PATIENT-CENTEREDNESS AS TAILORING OF CARE

One definition that would reflect the reason for patient-centeredness' emergence would be the one proposed by Berwick (2002). He suggests that the patient-centered approach is care that “respects the individuality, values, ethnicity, social endowments, and information needs of each patient. [...] The aim is customization of care, according to individual needs, desires, and circumstances” (Berwick, 2002, pp. 84-85). The primary purpose of patient-centeredness is indeed to tailor care according to each patient's specificities. Epstein and Street (2007, p. 7) even claim that “One key defining element of effective patient-centered communication is the clinician's ability to monitor and consciously adapt communication to meet the patient's needs”.

Therefore, listing a set of behaviors to apply to all patients and define them as patient-centered is a misconception of the primary aim of this approach. It indeed ignores the tailoring of care that is the core basis of patient-centeredness, because the prescribed so-called patient-centered behaviors cannot fit every patient's needs or preferences. For instance, in the Euro-communication scale, involving the patient in decision making is a key element of patient-centeredness, but some patients might not want to take an active part in the decision-making process and might prefer the physician to be directive. Thus, defining patient-centeredness as the involvement of patients in decision making does not correspond to patient-centeredness that is understood as care congruent with patient's needs and preferences.

An investigation of patient-centeredness respecting its core purpose should measure the extent to which the physician behaviors are tailored according to each different patient and not to the extent to which one set of behaviors is displayed toward all patients indifferently. The goal of the present work is to investigate this tailoring process we call behavioral adaptability and to test its effectiveness in physician-patient interactions. Physician behavioral adaptability is proposed as an operationalization of patient-centeredness more suitable to the first aim of this approach. It indeed assesses the extent to which physicians modify their behaviors from one patient to the other in order to match their individual characteristics. Physician behavioral adaptability thus replaces the patients and their uniqueness at the center of the consultation.

4 BEHAVIORAL ADAPTABILITY

The idea of inter-individual behavioral adaptation is not new in itself. In the communication field, many authors proposed theories to understand how behaviors are patterned in human relationships. I will now introduce the communication theories conceptualizing adaptability processes and their testing in the physician-patient interaction field. Then, the proposed physician behavioral adaptability model will be presented.

4.1 COMMUNICATION THEORIES OF ADAPTABILITY PROCESSES

4.1.1 Communication Accommodation Theory

Giles, Coupland, and Coupland's widely acknowledged Communication Accommodation Theory (CAT;1991) posits that people use both convergence and divergence strategies to emphasize the similarities or dissimilarities between them and their interactional partners. Both verbal and nonverbal behaviors of the interactional partners can be coded and compared to measure convergence (displaying the same behaviors) or divergence (displaying the opposite behaviors) moves of both parties. Convergence is believed to be evaluated as positive while divergence should lead to negative evaluation. Indeed, convergent moves are supposed to strengthen the feeling of similarity between interactional partners. It is thus used to obtain social approval, communication efficiency, or both. Divergence moves, on the other hand, are used to reinforce differences. They are used to disengage oneself from the interaction or to signify dislike.

The CAT is an adaptation communication theory that has been extensively tested in physician-patient interaction (Baker, Gallois, Driedger, & Santesso, 2011; Watson & Gallois, 1998, 1999). It has been shown to be relevant for the analysis of behavioral moves in physician-patients interaction. D'Agostino and Bylund (2011) even created a nonverbal coding scheme based on the CAT: the Nonverbal Accommodation Analysis System (NAAS; D'Agostino & Bylund, 2011). The authors used it to analyze the convergent and divergent nonverbal moves in oncologic interactions recorded as part of the evaluation of a communication training (D'Agostino & Bylund, 2013). Results showed that 29.9% of the analyzed interactions were characterized by joint convergent moves with both patient and physician displaying approach behaviors toward one

another. Almost the same percentage (29.3%) was characterized by the patient displaying approach nonverbal behaviors and the physician displaying maintenance or divergent moves. However, D'Agostino and Bylund did not test how these moves are related to consultation outcomes. The CAT assumption would postulate that the joint convergent interactions should more positively be evaluated compared to the divergent interactions. This postulation is also the foundation of interactional synchrony, which has been tested in the physician-patient interaction.

4.1.2 Interactional synchrony

Interactional synchrony (IS; Condon & Ogston, 1967) is based on the assumption that, when interacting with each other, people will more or less tend to the synchronization of their verbal and nonverbal behaviors. They will coordinate their own behaviors to their interactional partners' to achieve a rhythmic fit between each other. In line with the mimicry literature showing that correspondence of behaviors between partners is related to more affiliation (Chartrand & Bargh, 1999), more synchrony is believed to be linked to more positive outcomes and can be used to facilitate the interaction whereas asynchrony is used to disengage the interaction. Indeed, empirical studies confirmed that interpersonal synchrony leads to more affiliation (Hove & Risen, 2009).

In the field of physician-patient interaction, IS and its link to patient satisfaction has been studied by Koss and Rosenthal (1997). External judges rated the IS of recorded medical encounters (simultaneous movement, tempo similarity, coordination, smoothness, and posture mirroring) as well as the medical encounter positivity. Results showed that the more synchronized the medical encounters were, the more positive they were evaluated by external judges, but there was no significant link found between patient satisfaction and IS (Koss & Rosenthal, 1997). These findings indicate that even if behavioral similarities overall steer toward a certain positivity it might not be enough to achieve positive consultation outcomes. It is thus necessary to also explore the impact of dissimilar behavior, because complementarity might be appropriate in some circumstances.

4.1.3 Sequential-Functional Model

The use and consequences of reciprocity or complementary behaviors is what the Sequential-Functional Model (SFM; Patterson, 1982) tries to conceptualize. It is based on

the assumption that humans strive for stable patterns. The SFM has the particularity to consider multiple factors that can challenge the stability of the exchange: individual factors (personal characteristics as well as preferences and expectations) and interaction factors (immediate behaviors displayed by both partners). A stable interaction is usually characterized by similarity between the two partners' behaviors. However, an interaction is perceived as unstable when an interactional partner's behaviors do not fit the expectations of the other. People will then try to reestablish a certain feeling of stability by displaying opposite or complementary behaviors.

To the best of our knowledge, this model has not been investigated in a medical setting. In fact, SFM includes many affective and cognitive steps or stages. This model is thus difficult to apply or test in its entirety. However, the SFM has been used as a conceptual framework to understand medical interactions. Notably, Street and Buller (1987) interpreted their study's results in the light of SFM. They showed that nonverbal behaviors related to dominance and control were complementarily displayed between patients and physicians with physicians displaying more dominance and patients displaying more submissive behaviors. By contrast, for the behaviors related to affiliation, the authors observed a pattern of similarity between patients and physicians. Both partners indeed displayed high affiliation toward each other. Interestingly, Kiesler and Auerbach (2006) reported a significant number of studies confirming this complementary/similarity pattern of affiliation and control.

4.1.4 Expectancy Violations Theory

Another communication theory – Expectancy Violations Theory (EVT) – goes a step further by underlining the inner world (expectations and preferences) of the interactional partners and communication behaviors. EVT posit that people have expectations about the verbal and nonverbal behaviors of each interaction partner they face. During the interaction, the behaviors actually displayed by the partner can match these expectations or violate them. If the behaviors match the expectations, the person will generally evaluate the interaction as being positive. If the expectations are violated, the interaction is usually evaluated as negative except if the behaviors actually shown are positively evaluated by the person. In this case, the partner has surprised the person with unexpected behaviors, but in a positive way. Thus, the interaction will be evaluated as even more positive than if the partner had matched the expectations of the person,

because the partner showed a behavior that is even more appreciated than the expected one. These assumptions have been supported by several studies (J. K. Burgoon, Stern, & Dillman, 2007).

Using EVT, Burgoon, Birk, and Hall (1991) studied how patients' compliance is related to aggressive behaviors of female and male physician. In a first study, they showed that male physicians are usually expected to show more aggressive behaviors than female physicians. However, less aggressive behaviors are overall valued by patients. In line with EVT, the authors hypothesize that less aggressive behaviors will lead to more compliance for both female and male physicians, because it is a behavior fulfilling the patients' preferences. On the other hand, more aggressive behaviors will be related to more compliance for male physicians and to less compliance for female physicians, because it's a behavior expected from males, but not from females. This hypotheses were confirmed by the results of their second study in which they manipulated the aggressiveness of physicians (M. Burgoon, et al., 1991). Burgoon, Birk, and Hall (1991) thus showed that the expectations of patients as well as their preferred type of behaviors influence how physicians' behaviors will relate to consultation outcomes.

EVT is particularly inspiring for the present work, because it underlines the importance of the partners' expectations and preferences. As EVT, our definition of physician behavioral adaptability postulates that correspondence between the physicians' behaviors and patients' preferences will lead to more positive consultation outcomes.

4.2 DEFINING PHYSICIAN BEHAVIORAL ADAPTABILITY

Physician behavioral adaptability is defined as the practitioner ability to flexibly change his or her behaviors in order to match each patient's preferences. Physician behavioral adaptability thus implies that (1) patients' preferences are specific of them and can highly vary from one patient to the other, (2) physicians' behaviors must be flexibly changed from one patient to the other, and (3) behavioral changes have to be adaptive in the sense that the behaviors shown correspond to each patient's preferences. In other words, behavioral adaptability does not only imply a change in behavior that could be randomly made from one consultation to the other, but a change made according to each patient's preferences. For instance, a physician showing behavioral adaptability will give little information to a first patient preferring few insights on his or her health condition,

but will give more information to a second patient who desires much input concerning his or her medical issue. According to the patient-centeredness approach which claims that customized care leads to better consultation outcomes, we posit that the more physician behaviors correspond to patients' preferences – the more behavioral adaptability they show – the more positive the consultation outcomes will be. The model I will now introduce focuses on how physicians can tailor their behaviors to obtain this correspondence.

4.3 BEHAVIORAL ADAPTABILITY MODEL (ARTICLE 1)

Marianne Schmid Mast and I (2015b) conceptualized the Physician Behavioral Adaptability model. It describes the process through which practitioners tailoring of behavior according to patients' preferences can lead to positive consultation outcomes (see Figure 1).

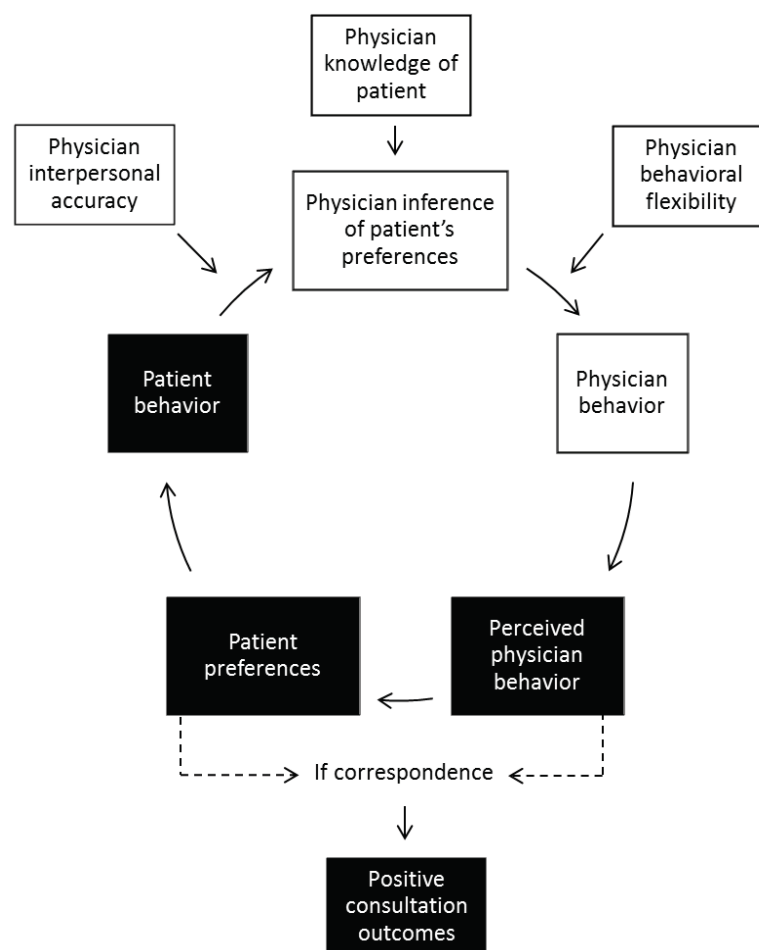


Figure 1. The Physician Behavioral Adaptability model. The black squares display the steps occurring on the patient's side and the white squares those happening on the physician's side.

The model proposes that *Positive consultation outcomes* arise when there is a *correspondence* between *Patient preferences* and the physicians' behavior as perceived by the patient (*Perceived physician behavior*). To attain this correspondence, the physician has to infer the patient's preferences based on the observed *Patient behavior*. *Physician inference of patient's preferences* is facilitated by the *Physician knowledge of the patient* (how well and how long the physician knows this patient) and the *Physician interpersonal accuracy*. This latter skill is defined as the ability to correctly infer others' characteristics based on the observation of his or her behavior (Hall & Bernieri, 2001) and is essential to infer patient's preferences. Then, if the physician is behaviorally flexible (*Physician behavioral flexibility*), he or she will be able to modify his or her behavior to match the inferred patient's preference and thus show behavioral adaptability.

For this article, a literature review in PsychINFO and MEDLINE was conducted using keywords related to adaptability (i.e., correspondence, matching, tailoring, congruence, adaptation). I will now summarize the results of this review, which demonstrates that the model is supported by empirical research.

4.3.1 Matching patients' preferences

Our model posits that physicians will benefit from more positive outcomes if their physician behaviors match their patients' preferences. The literature affords evidence for the benefit of the correspondence between physicians' behaviors and their patients' preferences. Regarding patients' preferences for information, Kiesler and Auerbach's literature review (2006) showed that patients were on average dissatisfied with the amount of information given by their physicians, because they received less information than they wanted. This included needs for information regarding the disease, the treatment, the prognosis, and the outcomes. Regarding other outcomes than satisfaction (e.g., behavioral ratings or physiological measures), the studies reviewed also show that the better the match between patients' needs for information and physicians' actual information giving, the better the patients' outcomes. For instance, diabetic patients had better glycemic control when physicians' information-giving behaviors matched their preferences (Cvengros, Christensen, Cunningham, Hillis, & Kaboli, 2009).

For interaction style, Kiesler and Auerbach (2006) also reported that better outcomes (more satisfaction or less depression) are linked to the match between patients'

preference for participation in the decision-making process and the role they actually adopted during the consultation. Those findings are also confirmed by another study showing that physicians' participatory behaviors and caring behaviors are linked to better satisfaction if they match the patients' preferences (Cvengros, et al., 2009).

This review of the matching studies supports part of the physician behavioral adaptability model. It indeed shows that a correspondence between physicians' behavior and their patients' preferences is, as posited, related to more positive patient outcomes.

4.3.2 Physician behavioral flexibility

If physicians want to tailor their behaviors in order to achieve this correspondence between physicians' behaviors and patients' preferences, they need to be behaviorally flexible. In other words, physicians should be able to flexibly change their behaviors from one patient to the other. One might indeed wonder whether physicians have the tendency to use the same interaction style with all of their patients or whether they are able to behave differently according to the different patients they are facing. According to our literature review, the latest seems most likely. It has for instance been shown that physicians behave differently toward a female patient than toward a male patient. Overall, physicians indeed show more affiliative and less dominant behaviors when interacting with a female physician compared to a male physician (Hall, Irish, Roter, Ehrlich, & Miller, 1994; Hall & Roter, 1995, 1998). Thus, the physicians seem to naturally have an array of interaction styles and not only one usual style applied systematically with every patient. This is sustained by a qualitative study showing that physicians modified their verbal strategies to facilitate shared decision-making with passive versus active patient (trained simulated patient; R. F. Brown et al., 2002). Moreover, in another study, intra-class correlations scores (ICCs) were computed in order to measure the flexibility/rigidity of each physician's facilitating (e.g., encouragements questions, or summary) and inhibiting behaviors (e.g., criticism, interruptions, or changing the subject). The ICCs ranged from 0.18 to 0.20 meaning that the physicians were not applying the same behaviors to every patient (in this case, the ICC would be closer to 1) and, at the same time, showed a certain consistency across the different consultations (total inconsistency would correspond to an ICC of 0; Zandbelt, Smets, Oort, Godfried, & de Haes, 2006). These results show that physicians are able to

modify their behaviors from one patient to the other while keeping a certain consistency in their interaction style.

The studies reviewed in Article 1 demonstrate that physicians are on average behaviorally flexible, but it does not necessarily mean that they overall show behavioral adaptability. Behavioral flexibility is not synonym of behavioral adaptability. Behavioral adaptability designates the whole process describe in our model, whereas behavioral flexibility is just one step that enables it. Indeed, the behavioral flexible changes should not be random but have to match each patient's preferences in order to be adaptive. Physician behavioral adaptability implies not only a behavioral flexibility, but one that is oriented toward patients' preferences. To do so, patient preferences need to be inferred by physicians.

4.3.3 Interpersonal accuracy

The word limit of Article 1 did not allow us to present extensively the concept of interpersonal accuracy. Nevertheless, this skill is essential for the physician behavioral adaptability. Indeed, in order to flexibly change their behavior to match patients' preferences, physicians need first to somehow know these preferences. Some authors propose asking patients about their preferences and then show this information to physicians before the consultation (Kiesler & Auerbach, 2006). This would be one of the best ways for the physicians to know patient preferences. However, this task is time consuming in a medical setting where time constraints are often an issue. Instead, physicians could use their interpersonal accuracy skills to assess patients' preferences. Interpersonal accuracy is defined as the ability to correctly assess traits (e.g., personality) and states (e.g., emotions) of others.

4.3.3.1 Assessing interpersonal accuracy

Interpersonal accuracy has been measured in many ways. Conceptually, a measure of accuracy should compare an evaluation or a perception of a feature to its "real" characteristics (Hall & Bernieri, 2001). There are several validated tests of interpersonal accuracy based on this evaluation-reality comparison. These tests present some slices of behaviors (nonverbal, verbal, or both; animated or static; full body or part of it; one or several persons) to the participants who evaluate some characteristics of the presented individual (i.e., emotions, intentions, personality, intelligence, status, or kinship). These evaluations are then compared to a true answer (e.g., what the individual intended to

display). The closer the evaluation is to the reality, the more interpersonally accurate the person is.

The Profile of Nonverbal Sensitivity (PONS; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979) is maybe the most used interpersonal accuracy test. It presents participants with 220 animated clips of an actress. This test is both visual and oral, because some clips include the voice of the actress manipulated in order to present only the tone of the voice, but no verbal content. The clips display only the head of the actress, only her body, the body with the head, or no visual output with only the manipulated voice. For each clip, the participant must choose between two propositions the one describing more accurately what the actress is doing (e.g., “A. helping a customer” or “B. asking forgiveness”). The PONS is meant to be a global measure of interpersonal accuracy that does not focus on one particular characteristic like personality or emotion, but on the ability to interpret correctly other’s behaviors. The disadvantage of the PONS is its length: 47 minutes to complete, but a validated 15-min long version, including 64 of the original clips, has been created (MiniPONS; Bänziger, Scherer, Hall, & Rosenthal, 2011).

The Diagnostic Analysis of Nonverbal Accuracy (DANVA; Nowicki & Duke, 1994) is an emotion recognition test presenting 24 portraits. For each portrait, participants indicate the emotion displayed by the person on the picture (happy, angry, sad, or scared). This short and well-validated test has been used in many studies. However, it is quite restrictive, because it measures only the ability to recognize facial emotional expression.

The Interpersonal Perception Task (IPT; Costanzo & Archer, 1989) consists of 30 video clips of one to four people discussing a subject. The clips are between 28 and 124 seconds long and the total length of the test is 38 minutes (again, a time-consuming test). Before each clip, a question is displayed to the participant (e.g., “who won the racquetball game?”) at the end of the clip, the participant has to choose the right answer between two to three propositions (e.g., “the man on the left” or “the man on the right”). The advantage of the IPT is that it tests interpersonal accuracy related to social relationship and interactions. It measures interpersonal accuracy according to five domains: kinship, intimacy, deception, competition, and status (six clips for each domain).

There is also an interpersonal accuracy test specifically made for physician-patient interaction: the Patient Emotion Cue Test (PECT; Blanch-Hartigan, 2011). This test presents 47 video clips of a female actor showing emotional statements derived from real patient interactions. The emotions displayed are anger, sadness, happiness, anxiety, confusion, or neutral, and the intensity of the emotions vary verbally and nonverbally. Participants evaluate which of the six emotional categories is displayed by the actress. The average length of the clips is three seconds and it takes only nine minutes to complete the entire PECT.

Interpersonal accuracy can also be measured with questionnaires. As emotion recognition is part of interpersonal accuracy, empathy questionnaires, such as the Interpersonal Reactivity Index (IRI; Davis, 1980), can be used as an interpersonal accuracy test. The IRI is a self-assessed questionnaire measuring four dimensions of empathy with 28 items (7 per dimension rated from 0 = does not describe me well to 4 = describes me very well): perspective taking (the tendency to put oneself in the shoes of others), empathic concern (the tendency to feel warmth and compassion for others), personal distress (the tendency to be negatively moved by others' misfortune), and fantasy (the tendency to identify with fictional characters). The Test of Nonverbal Cue Knowledge (TONCK; Rosip & Hall, 2004) is a questionnaire measuring explicit knowledge of nonverbal cues. Participants evaluate whether 81 assertions concerning nonverbal behaviors are true or false. Sample items are "Widening of the eyelids while speaking signifies emphasis on what was said," "People are more likely to touch themselves while telling the truth than when lying," or "Anger in the voice is revealed by a decrease in speech rate." The TONCK was created as a questionnaire alternative to measure interpersonal accuracy and correlates well with nonverbal decoding test, like the DANVA or PONS.

4.3.3.2 Benefits of interpersonal accuracy

Overall, people are quite accurate in their inference of others' characteristics. Research shows that we are able to assess what other people feel or think (Ickes, 2001, 2003), their personality traits (Ambady, Hallahan, & Rosenthal, 1995; Borkenau & Liebler, 1992; Funder & Colvin, 1997; Funder & Sneed, 1993), or what their intentions and motives are (DePaulo, Rosenthal, Green, & Rosenkrantz, 1982; Rosenthal, et al., 1979). A meta-analysis even showed that thin slices of behaviors (less than 30 seconds)

are sufficient to form a correct perception of others (Ambady & Rosenthal, 1992). Interpersonal accuracy is a socially beneficial skill to possess. It has been demonstrated that accurate perception increases emotional competences, relationship quality, social functioning, and other positive interactional characteristics (Hall, Andrzejewski, & Yopchick, 2009).

Compared to the general population, physicians' interpersonal accuracy skills seem rather low. For instance, physicians are overall not able to correctly infer their patients' health beliefs, emotions, or satisfaction with the consultation (Hall, Stein, Roter, & Rieser, 1999; Merkel, 1984; Street & Haidet, 2010). Yet, interpersonal accuracy is an interesting skill to possess as a physician, because clinicians that are more accurate in their perception of others have more satisfied, compliant, and involved patients (Hall, et al., 2009).

The physician behavioral adaptability model might explain why more interpersonally accurate physicians benefit from more positive consultation outcomes. Indeed, the link between physicians' interpersonal accuracy and positive consultation outcomes might be explained by the fact that interpersonal accuracy enables physicians to correctly infer their patients' preferences and in turn show adapted behaviors that lead to more positive outcomes. Behavioral adaptability can thus be seen as the behavioral step linking interpersonal accuracy skills to positive interaction outcomes. This assumption will be tested in our second study investigating the effectiveness of the physician behavioral adaptability model (see section 5.2).

4.4 METHODOLOGICAL ISSUES OF PHYSICIAN BEHAVIORAL ADAPTABILITY

The goal of the present work is not only to propose the physician behavioral adaptability model, but also to test it in the field. Testing physician behavioral adaptability implies some operationalization challenges: First, the patients' preferences and the corresponding physician behaviors have to be defined and operationalized. Then, the testing of physician behavioral adaptability demands a specific design that is multileveled with several patients per each physician. Finally, a way to compute behavioral adaptability scores has to be determined.

4.4.1 Operationalization of patient preferences and physician behaviors

As we define it, physician behavioral adaptability is the extent to which the physicians tailor their behaviors to different patients' preferences they are facing. Before testing how this adaptability is linked to consultation outcomes, the patients' preferences as well as the physicians' behaviors must be operationally defined. For instance, one might want to test how physicians adapt their information-giving behaviors to the patients' preferences for information giving. To do so, the physicians' information-giving during consultations can be coded with the RIAS categories related to information (e.g., gives medical, therapeutic, lifestyle, psychosocial, and other information). This coding can then be compared to the patients' preferences for information (e.g., as measured by a questionnaire).

In our studies testing the effectiveness of physicians' behavioral adaptability, we focused on how physicians adapt their behavior to the preferences of the patients in terms of affiliation and control (synonym of caring and sharing). Indeed, affiliation and control have been recognized as the two fundamental dimensions of human interactions (Kiesler, 1996). Moreover, they have been extensively used to describe patients' preferences (Krupat, Rosenkranz, et al., 2000; Krupat, Yeager, & Putnam, 2000) as well as physicians' interaction style (Kiesler & Auerbach, 2003).

We evaluated patient preferences for control and affiliation with the Patient-Practitioner Orientation scale (PPOS; Krupat, Rosenkranz, et al., 2000). This self-assessed questionnaire measures the patients' preferences for sharing and caring. The sharing dimension assesses the patients' attitude toward power or control over the medical situation. It includes nine items such as "Patients should be treated as partners, equal in power and status," "The doctor is the one to decide what is to be discussed during a doctor's appointment" (reversed scored), or "It is best for the patients not to be told too much about their illness" (reversed item). The patients rate their agreement for each item on a scale from 1 (not at all) to 5 (very much so). The caring dimension of the PPOS assesses the extent to which patients want their physician to be affiliative and show concern. It comprises nine items also evaluated on a scale from 1 (not at all) to 5 (very much so). Sample items of the caring dimension are "A treatment cannot be successful if it is in direct conflict with the lifestyle or values of the patient," "The most important part of a consultation is the medical" (reversed item), or "If physicians are really good at diagnosis and treatment, their relationship to the patient does not matter so

much” (reversed item). The PPOS has been used in several studies testing the match between patient preferences and physician behaviors and showed good internal and external validity (Krupat, Hsu, Irish, Schmittiel, & Selby, 2004; Krupat, Rosenkranz, et al., 2000; Krupat, Yeager, et al., 2000).

Physician behaviors were coded from the videotaping of medical interaction. Each behavior coded was selected according to previous studies showing how affiliative or controlling behaviors are perceived. In our first study, we focused on the control dimension. We selected nonverbal behaviors that have been showed to be perceived as dominant (control behaviors). We then tested the extent to which physicians adapted these dominance behaviors according to patients’ preferences for paternalism (less sharing as measured with the PPOS). The adaptability of physicians’ dominance is highly pertinent, because patients have been showed to vary in their preferences for paternalism (Gattellari, et al., 2001; Guadagnoli & Ward, 1998). In our second study, we chose to enlarge the interaction styles targeted and included affiliation along with control. We used an aggregation of patients’ preferences for caring and sharing and composite variables of physicians’ behaviors that have been showed to be related positively to affiliation and negatively to control, because sharing correspond to the reverse of control.

4.4.2 A design to test physician behavioral adaptability

The studies reviewed by Kiesler and Auerbach (2006) measured the match between physician behaviors and patient’s preferences as categorical variables. First, patient preferences were assessed with questionnaires and physician behaviors were evaluated by external coders or by the patients themselves. Then, these two variables (patient preferences and physician behaviors) are compared in order to create a congruence variable usually ranging from “patient received more than preferred” to “patient received less than preferred.” The link between the so-computed congruence variable and consultation outcomes is then tested. For instance, Keating, Guadagnoli, Landrum, Borbas, and Weeks (2002) asked patients who had undergone breast cancer surgery to indicate their desired role in decision-making and to evaluate how treatment decisions with their surgeon were made. These two variables were then compared and a three-category variable was created: “patient less active than desired,” “match,” and “patient more active than desired.” For each of this category, the authors computed the proportion of patients reporting being “very satisfied” with the treatment decision. Results showed

that patients whose desired involvement matched the one they actually assumed (the “match” category) were more likely to be very satisfied with their choice of therapy (Keating, et al., 2002).

In the present work, we are interested in the active adaptation of physicians’ behaviors. Categorizing the physician behaviors as more or less matching the patients’ preferences does not account for the ability of physicians to adapt their behaviors. Indeed, the categorization of matching could be computed from a data set with one patient per each physician. However, physician behavioral adaptability is the extent to which each physician changed his or her behaviors from one patient to the other. Consequently, for an accurate operationalization of physician behavioral adaptability, we must look at practitioners when interacting with several of their patients and analyze whether each physician was able to change his or her behavior according to the different patients.

Having several patients per physician implies a multilevel organization of the data (see Figure 2): At level 1, we have the patients and their variables. The physicians and their variables are at level 2. This organization of data is called “clustered”, because the patients are nested within physicians. The statistical analyses used must acknowledge this organization of data. They should take into account that the patients consulting with the same physicians might share some characteristics that the other patients do not, because they consulted with another physician. Thus, the test of the physicians’ behavioral adaptability as we define it theoretically asks for multilevel analysis (Hox, 2010).

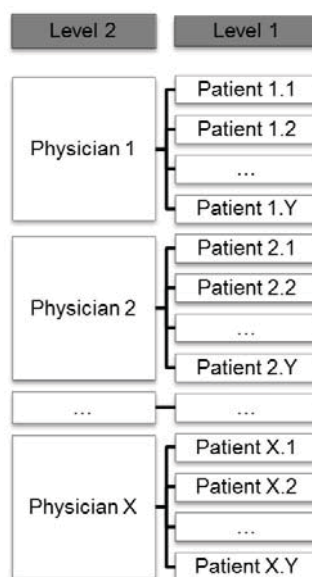


Figure 2. Design of a 2 level data set.

4.4.3 Assessing physician behavioral adaptability scores

Measuring physician behavioral adaptability scores should represent more than a behavioral change from one patient to the other, but also the fit between different patients' preferences scores and the behaviors the physician showed toward each of these patients. Correlations (Pearson's r) are the standard measures of a fit or correspondence between two variables. Figure 3 illustrates how physicians' behavioral adaptability scores can be computed with correlations in setting with four patients per physician.

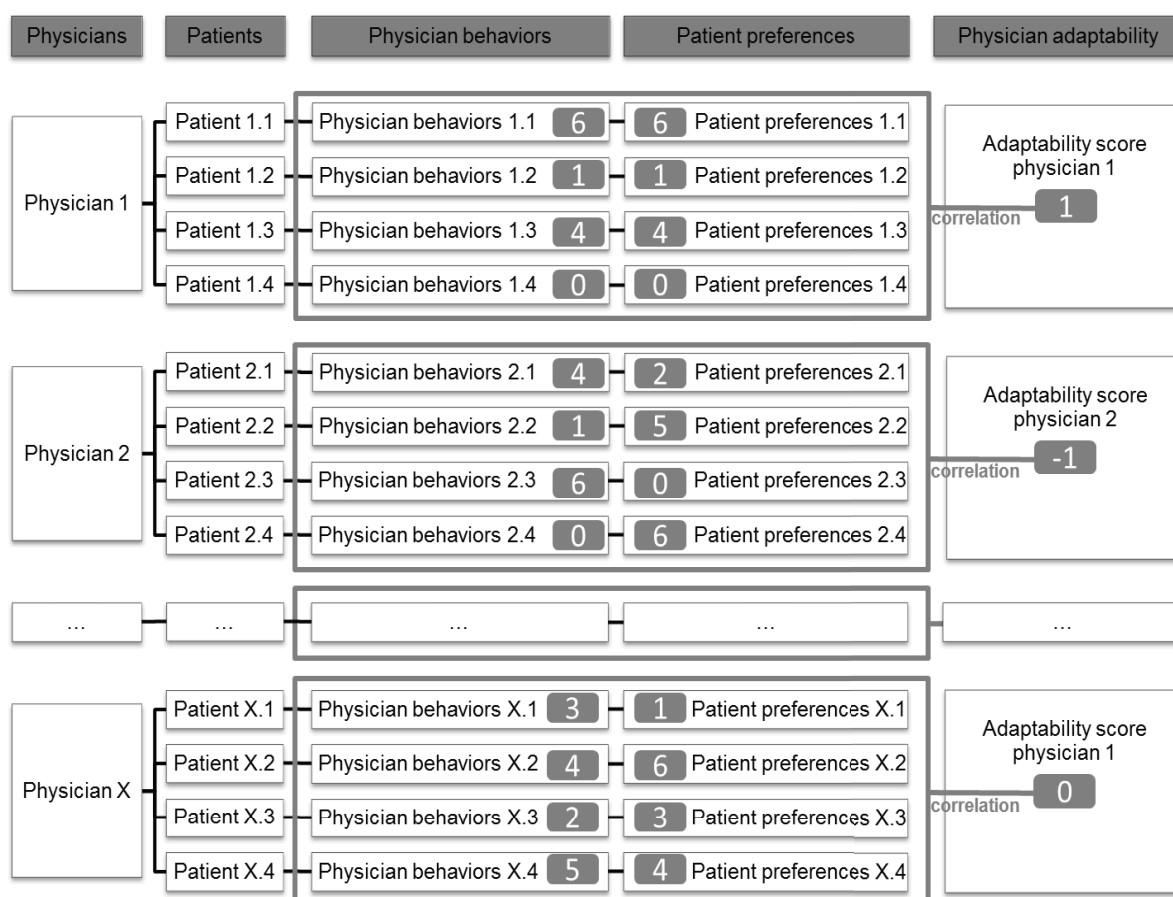


Figure 3. Physician behavioral adaptability scores as correlations. How physicians' behavioral adaptability scores can be computed with correlation in a setting with four patients per physician. The grey squares are examples of physicians' behaviors, patients' preferences, and physicians' behavioral adaptability scores.

For each physician the correlation between his or her patient's preferences and the behaviors he or she showed during the corresponding consultations are computed. A Pearson r of 1 means that the physician's behavior during each consultation corresponded exactly to each patient's preferences whereas an r of -1 means that the physician's behaviors are the perfect reverse of the patients' preferences and an r of 0 correspond to a random distribution between physician behaviors and patient preferences.

However, correlations between patient preferences and physician behaviors are only possible with a minimum of three patients per physician. In one of our studies (presented in more detail in section 5.1), we recruited two patients per physician. We thus could not use correlations and used difference scores instead. Indeed, we measured behavioral adaptability by subtracting the physicians' behavioral scores shown toward the patient preferring less dominance from the physicians' behavioral scores shown toward the patient preferring more dominance (see Figure 4 for an illustration of the difference scores method). The so-computed difference measure of behavioral adaptability assesses the extent to which physicians show dominance behavior to the patient preferring more dominance compared to a patient preferring less dominance. The higher this measure, the more the physician showed behavioral adaptability, because he or she varied his or her behavior according to the two patients' preferences for dominance.

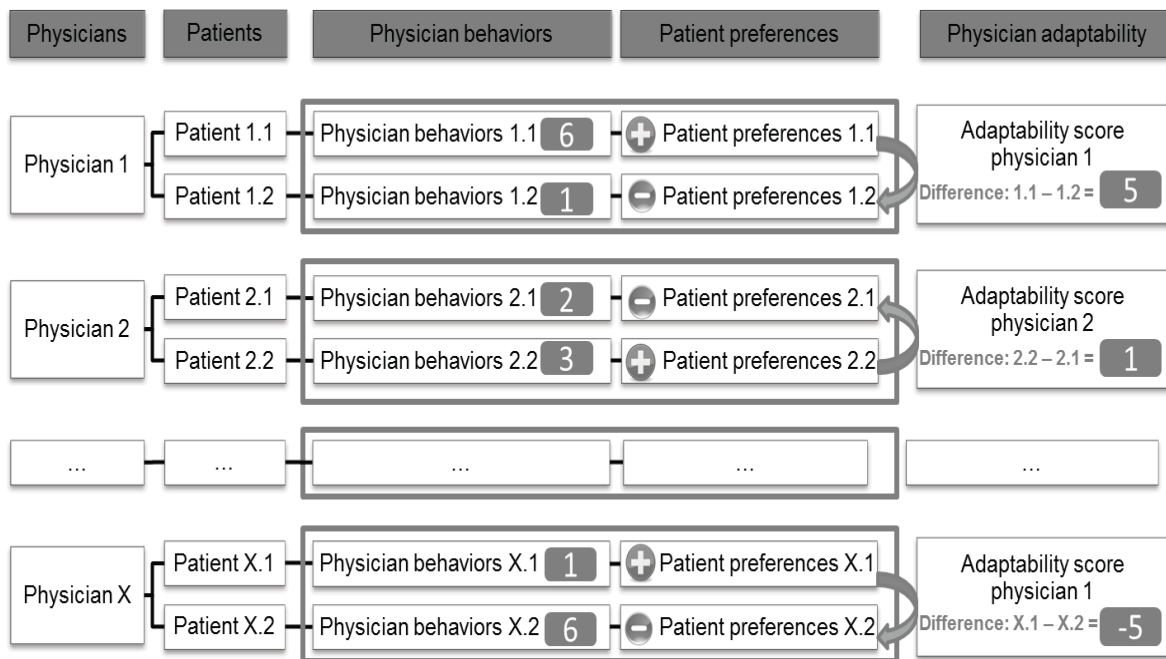


Figure 4. Physician behavioral adaptability scores as differences. How physicians' behavioral adaptability scores can be computed with differences in a setting with two patients per physician. The grey squares are examples of physicians' behaviors, and physicians' behavioral adaptability scores.

This difference scores technique is the one we used for our first testing of physician behavioral adaptability effectiveness whereas we were able to use the correlation method in our second study. In the following section, I will summarize the two articles presenting these two studies.

5 EFFECTIVENESS OF PHYSICIAN BEHAVIORAL ADAPTABILITY

5.1 ADAPTABILITY TO PATIENTS' PREFERENCES FOR PATERNALISM (ARTICLE 2)

In our first test of the physician behavioral adaptability model, Marianne Schmid Mast, Gaëtan Cousin, and I (2016) conducted supplementary analysis on a data set collected in previous studies (Cousin, Schmid Mast, & Jaunin-Stalder, 2013a, 2013b). The data set comprised 32 general practitioners (18 males and 14 females) from the French-speaking part of Switzerland. Between 2010 and 2011, these physicians were videotaped during two consultations: one with a female patient and one with a male patient (with the exception of one physician being videotaped with two male patients). The patients indicated their preferences for the physician's interaction style on the sharing dimension of the PPOS (described in more detail in section 4.4.1) that we reversed in order to obtain an evaluation of patients' preferences for paternalism. After the consultation, patients indicated their degree of satisfaction with the visit, their trust in the physician, and their evaluation of physician competence.

Based on the videotaped consultations of this data set, we coded the physicians' dominance behaviors, because dominance is typically a paternalist behavior (Roter & Hall, 2006). We coded seven physicians' nonverbal behaviors that have been proven to be perceived as dominant by analogue patients (Schmid Mast, Hall, Klöckner Cronauer, & Cousin, 2011): visual dominance (gazing when speaking and not gazing when listening), loudness of voice, speaking time, gazing at the notes or computer, gazing at the patient (reversely related to dominance), nodding (reversely related to dominance), and smiling (reversely related to dominance). All behaviors, except smiling, correlated well (Cronbach's $\alpha = .66$). We thus created a composite variable excluding smiling.

Behavioral adaptability scores were then computed with the difference scores technique described previously (see section 4.4.3). Each patient indicated their preferences for paternalism with the sharing items of the PPOS questionnaire before the consultation. We were thus able to tell for each physician which of his or her two patients prefers more paternalism and which prefers less paternalism. For each physician, we subtracted his or her dominance behavior score shown toward the patient preferring less paternalism from his or her dominance behavior score showed toward the patient

preferring more paternalism. The so-computed behavioral adaptability scores assess the extent to which the physicians showed more dominance toward the patient preferring more paternalism compared to the patient preferring less paternalism. The higher the score, the more adaptability the physician showed. Dominance is indeed a paternalistic behavior and it would be adaptive to show more of this kind of behavior toward the patient preferring more paternalism.

5.1.1 Results

The link between behavioral adaptability scores and consultation outcomes has then been tested with multilevel analysis regressing consultation outcomes from behavioral adaptability scores. The consultation outcomes variable is an aggregated measure of the patients' evaluation of consultation satisfaction, trust in the physician, and physician competence. We also entered patient and physician gender, patient and physician age, physician experience, and the absolute differences between the two patients' preferences as control variables in the model. Results show that physicians' dominance adaptability is positively related to patient positive outcomes. In other words, the more dominance behaviors the physicians showed toward the patient preferring more paternalism (compared to the patient preferring less paternalism), the more positive the consultation outcomes were. This study demonstrates that the more the physicians adapted their dominance behavior to two patients with different preferences, the more positive the consultation outcomes were.

5.1.2 Discussion

This first evidence for the validity of the physician behavioral adaptability model and for the benefit of the tailoring of dominance behaviors needed replication and extension. Indeed, the study presents several limitations.

The difference scores we used as a measure of behavioral adaptability present some issues that need to be addressed in further exploration of the concept. Indeed, the two patients of the participating physicians could have had very different preferences and thus allow the physician to show more adaptability compared to a physician having two patients with very similar preferences. In this former case, the physician would not have the opportunity to show behavioral adaptability, because it would be inappropriate with patients with very similar preferences. In the study, we entered the absolute difference between the two patients' preferences as a control variable in order to address this issue,

but such a problem would be reduced with correlations between physicians' behaviors and patients' preferences (only possible with three or more patients per physicians). Moreover, the difference scores we used would label extremely different behaviors as being adaptive. For instance, one of our participating physicians could have had two patients who just slightly differ in their preferences for paternalism. If this physician showed highly dominant behaviors to the one preferring a little more paternalism and very little dominance toward the one preferring a slightly less paternalism, the adaptability score would still be very high even though the physician behaviors cannot be considered as really adapted. Indeed, the displayed behaviors were too extreme regarding the slight difference between the two patients. Again, using correlations to assess physician behavioral adaptability would avoid this limitation of difference scores. Moreover, having more than two patients per physician will increase the probability to have more variability in patient preferences.

In this first test of physician behavioral adaptability effectiveness, the behaviors studied are limited and need to be broadened. This investigation of behavioral adaptability was indeed done regarding only one of the two fundamental dimensions of human interactions: control. The dominance behaviors are pertinent for the medical encounter, but the adaptability of the affiliation behaviors should also be tested. Furthermore, the investigation of behavioral adaptability should not focus solely on nonverbal behaviors; verbal adaptability scores should be included in further studies.

Finally, a more comprehensive test of the physician behavioral adaptability model should include an evaluation of physicians' interpersonal accuracy. Indeed, the physician behavioral adaptability model claims that the more physicians are able to correctly infer other traits and states, the more they will adapt their behaviors, and, in turn, the more positive the outcomes will be for patients. We tried to overcome these limitations in a second study testing the effectiveness of physician behavioral adaptability model.

5.2 ADAPTABILITY TO PATIENTS' PREFERENCES FOR CARING AND SHARING (ARTICLE 3)

Marianne Schmid Mast, Nicole Jaunin-Stalder, Noëlle Junod Perron, Johanna Sommer, and I (2016) collected data from 61 physicians and 244 of their patients in order to replicate and overcome some limitations of Article 2's study. Between 2013 and 2014, we videotaped 61 general practitioners (34 male and 27 female) from the French-

speaking part of Switzerland during four consultations with four different patients (two male and two female patients per physician). Before the consultation, the physicians completed an online interpersonal accuracy test: the DANVA (see detailed description of this test in section 4.3.3.1) and the patients indicated their preferences for physicians' interaction styles on the two dimensions of the PPOS: caring and sharing (described in more detail in section 4.4.1). After the consultation, patients completed a questionnaire concerning their satisfaction with the visit and trust in their physician.

Based on the videotaped consultation, we coded the following three physicians' nonverbal behaviors inversely related to sharing (Kiesler & Auerbach, 2003): gazing at the notes or computer, loudness of voice, speaking time; and the following four nonverbal behaviors related to caring (Kiesler & Auerbach, 2003): physician gazing at the patient, nodding, smiling, and patient speaking time. Once the behaviors inversely related to sharing are reversed, the seven coded behaviors correlated well together (Cronbach's $\alpha = .68$). We thus created a composite variable of physicians' nonverbal caring/sharing behaviors (named CSB). We also used the RIAS (described in more detail in section 2.4) in order to assess physicians' verbal behaviors related to caring and sharing. We used a so-called "patient-centered" ratio of the RIAS used in a previous study (see section 3.2; Ford, et al., 1996; Ishikawa, Takayama, Yamazaki, Seki, & Katsumata, 2002; Mead & Bower, 2000a). This ratio divides the utterances that correspond to caring and sharing behaviors (e.g., empathy, partnership, approval) by the utterances that are inversely related to caring and sharing (e.g., criticism, closed-ended medical question). The so-computed ratio indicates the extent to which the physician showed verbal CSB.

For this study, behavioral adaptability scores were computed with correlations as described in section 4.4.3. For each physician, we computed a correlation between his or her four patients' preferences and the CSB showed during the four corresponding consultations. We did so separately for verbal and nonverbal CSB. We thus obtained one verbal adaptability score and one nonverbal adaptability score for each physician. These score indicate how much his or her behavior matched each patient's preferences.

5.2.1 Results

A first set of analyses was conducted to test the link between interpersonal sensitivity and behavioral adaptability. Because these two variables are on the level of

the physicians, we did not need to use multilevel analysis. Physician experience as well as patients' age, education, years since first consultation, frequency of visit, severity of medical problem, and consultation duration were entered as control variables. Results showed that more interpersonal accuracy (tested as emotion recognition) is related to more verbal and nonverbal adaptability for female physicians (marginally significant for nonverbal adaptability). For male physicians, we found that more interpersonal accuracy is related to *less* nonverbal adaptability and there was no link between interpersonal accuracy and verbal adaptability.

We then computed multilevel modeling regressing the consultation outcomes (satisfaction with the visit aggregated with trust in the physician) from the two behavioral adaptability scores. Physician experience as well as patients' age, education, years since first consultation, frequency of visit, severity of medical problem, and consultation duration were entered as control variables. Results showed that more nonverbal adaptability is related to more positive outcomes, but only for female physicians. We did not find any significant link between male behavioral adaptability and consultation outcomes or between female verbal adaptability and consultation outcomes. Moreover, results showed that an overall high level of caring and sharing behaviors is less related to consultation outcomes than an adaptability of the same behaviors according to the patients' preferences. This result demonstrates that adaptability of behaviors is more advisable than displaying toward every patient the usual so-called patient-centered behaviors measured as high caring and sharing.

5.2.2 Discussion

In this study, we wanted to see how physicians' interpersonal accuracy (measured as emotion recognition) is related to more behavioral adaptability to patients' preferences for caring and sharing. Moreover, we tested whether this physician behavioral adaptability is related to better consultation outcomes. In sum, this study shows that female physicians skilled with more emotion recognition display more behavioral adaptability to their patients' preferences. In turn, female physicians' nonverbal adaptability is linked to more positive outcomes whereas a high level of caring and sharing toward all patients is not. This result affords further evidence for the effectiveness of behavioral adaptability, but also presents intriguing gender differences that will be now discussed.

In our sample, male physicians are not less able to recognize emotions compared to female physicians (t-tests showed no gender differences on the DANVA). However, male emotion recognition skills are not related to verbal adaptability and negatively related to nonverbal adaptability; the more male physicians are able to recognize emotions, the less adapted their nonverbal behaviors are to patients' preferences. The emotion recognition test we used to measure interpersonal accuracy, the DANVA, is a strictly nonverbal test. Literature shows that men have less knowledge concerning nonverbal behaviors. Indeed, compared to women, men score lower at the TONCK (Rosip & Hall, 2004), which tests the explicit knowledge of nonverbal cues and how nonverbal cues are related to the person's inner state (see section 4.3.3.1 for a detailed description of the TONCK). Article 3's results can be explained by male physicians' misunderstanding of nonverbal cues. We can suppose that male physicians are able to recognize the emotions, but misunderstand how nonverbal display of emotion is related to preferences for caring and sharing. Thus, they wrongly link the emotions recognized to the patients' preferences or the adapted behavior to display. Female physicians' behavioral adaptability seems to be based on their emotion recognition skills, whereas male physicians might be misled by their emotion recognition, because of a lower understanding of nonverbal emotional cues. Nevertheless, we do not think that interpersonal accuracy is not related at all to behavioral adaptability for male physicians. We believe that male physicians do not use nonverbal cues to infer patients' preferences and adapt to them, but other cues such as patients' verbal behaviors. We will more fully discuss this possible interpretation and how to investigate it in the General Discussion (see section 6.3.5)

The results or, more accurately, the lack of significant results concerning the link between verbal adaptability and consultation outcomes, will be discussed in the General Discussion (see section 6.3.2). Regarding the link between consultation outcomes and nonverbal adaptability, our results show again surprising gender differences with more nonverbal adaptability being related to more positive outcomes for female physicians, but not for male physicians.

These findings are unlikely to indicate that male physicians never benefit from more behavioral adaptability, because Article 2's results indicate that male physicians do benefit from more dominance nonverbal adaptability. In Article 3, we measured nonverbal adaptability as the extent to which caring and sharing behaviors corresponded to patients' preferences for caring and sharing. It thus suggests that male physicians

benefit from adaptability in the dominance dimension, but not in the caring and sharing dimensions taken together (they indeed were not disentangled). One explanation could be that male physicians do not benefit from adaptability on the caring behaviors, because they are evaluated positively no matter the amount of caring they display. If this is the case, the level of caring of male physicians does not influence how they are evaluated by the patient. Consequently, no link could be found between male physicians' caring adaptability and consultation outcomes, because male physicians do not need to adapt their caring in order to have more positive outcomes. This interpretation of our results is in line with a literature review I conducted with Marianne Schmid Mast (2015a) on gender differences in physician-patient interactions.

5.3 GENDER IN PHYSICIAN-PATIENT INTERACTION (BOOK CHAPTER)

Gender is an important and highly influent aspect of physician-patient communication. Both patients and physicians behave differently according to their gender and to the gender of their medical partner. In the general population, women are known to show more immediacy behaviors, such as attentive gazing, touching, smiling, or head tilting whereas men show more dominant behaviors, such as using an authoritative voice, visual dominance, or greater speaking time (J. K. Burgoon & Dillman, 1995). People also treat men and women differently, tend to show more immediacy behaviors (gazing, smiling, approach, and self-disclosure; Dindia & Allen, 1992; Hinsz & Tomhave, 1991), and dominant behaviors (interrupt more, give less conversational floor; J. K. Burgoon & Dillman, 1995) when interacting with women compared with men.

In the physician-patient interaction, we can observe the same tendencies. Compared to males, female physicians show more affiliative or caring behaviors, less control, and more sharing behaviors (Roter & Hall, 2004; Roter, Hall, & Aoki, 2002). In response, patients talk more, give more information, use more positive communication, and show more empowered behaviors when consulting a female physician than when consulting a male physician (Hall & Roter, 1998, 2002).

Female physicians show more of the behaviors usually recommended by the literature and patients seem to respond accordingly by showing more positivity and empowerment (Hall & Roter, 1998, 2002; Roter & Hall, 2004; Roter, et al., 2002). Female physicians are thus expected to have on average more positive interaction

outcomes than male physicians (Roter & Hall, 2004; Roter, et al., 2002). Surprisingly, this is not the case. In our Book Chapter, Marianne Schmid Mast and I (2015a) explained how stereotypes and expectations toward physicians and gender counteract the beneficial effects of female physicians' behaviors (Carrard & Schmid Mast, 2015a).

The *lack of fit* model (Heilman, 1983, 1995) claims that job stereotypes bring people to conceive expectations concerning others' characteristics. If a person does not correspond to the characteristics we expected for a specific job, we will evaluate him or her more negatively. Physicians are assumed to be warm and caring, but they are also expected to possess many male-typical attributes, such as high status, technical and scientific knowledge, and authority (Roter & Hall, 2006). Thus, even if female physicians show more of the appropriate behaviors, they do not benefit from it, because the lack of fit between their gender and what is expected from physicians lowers the positivity of patient evaluations. One study also showed that female physicians' evaluations depend highly on whether their behaviors correspond to stereotypes and expectations linked to their gender (Schmid Mast, Hall, Köckner, & Choi, 2008). Schmid Mast et al. (2008) tested how analog patients evaluated real videotaped physicians according to the behaviors they displayed. They showed that female physicians behaving in a less caring way were evaluated more negatively, whereas male physicians were evaluated positively no matter the level of caring they displayed (Schmid Mast, et al., 2008). Women are expected to be caring and a female physician who does not show caring will thus be evaluated more negatively, because she breaks the stereotypical expectations of her gender. Conversely, a male physician displaying less caring fulfills the gender stereotypes of male behaviors. Yet, if male physicians behave to the contrary of their gender stereotypes by displaying more caring, they will also be evaluated positively, because they are showing a behavior expected from physicians. In any case, male physicians will benefit from more positive outcomes regardless of the amount of caring they showed. This could explain the results presented in Article 3. If male physicians' level of caring is not related to the positivity of consultation outcomes, neither will their adaptability of caring behaviors. Our results did not show any link between male physicians' adaptability of caring and sharing, because they would benefit from more positive outcomes no matter how much caring they displayed.

6 GENERAL DISCUSSION

6.1 CONTRIBUTION

In the present work, we saw that the quality of physician-patient communication affects consultation outcomes. The currently advised communication approach is patient-centeredness. Originally, this approach has been conceptualized to place the patients, and their perspectives, needs, and preferences at the center of the medical encounter. According to this definition, patient-centered care should be tailored to the patients' characteristics. However, until now, the operationalization of patient-centeredness has been to define a set of so-called patient-centered behaviors and to test to which extent physicians display them for each patient. A measure of physicians' patient-centered primary aims should explore the extent to which physicians modify their behaviors according to each different patient's characteristics. The present work proposes the concept of physician behavioral adaptability defined as the practitioner ability to flexibly change his or her behaviors from one patient to the other in order to match their specific preferences. Physician behavioral adaptability is posited to be a more accurate operationalization of patient-centeredness, because it conceptualizes how physicians tailor their care to the patients' specificities.

The adaptation of behaviors in human interactions has been conceptualized to some extent by different communication theories (see section 4.1). In Article 1, we propose a new model that maps how physicians can flexibly adapt their behaviors according to each patient's preference: the physician behavioral adaptability model. It posits that the correspondence between each patient's preferences and physicians' behaviors displayed to them is related to better consultation outcomes. It also conceptualizes how interpersonal accuracy help physicians infer patients' preferences and thus enable them to adapt their behaviors accordingly. The model is supported by the literature reviewed in Article 1 and we conducted two field studies in order to validate the processes proposed by the physician behavioral adaptability model.

To the best of my knowledge, this work is the first to empirically measure physicians' behavioral adaptability as a behavioral change from one consultation to the other that matches each patient's preferences. Several patients per physician have been integrated in a multilevel analysis to ascertain how tailoring of physicians' behavior from one patient to the other is related to consultation outcomes. The result of Article 2

showed that physicians' tailoring of dominance behaviors according to patients' preferences for paternalism is related to more positive outcomes (satisfaction with the visit, trust in the physician, and evaluation of physician competence). This beneficial effect of behavioral adaptability was confirmed in Article 3 for the caring and sharing nonverbal adaptability of female physicians. We indeed showed that female physicians benefit from more positive outcomes (satisfaction with the visit and trust in the physician) if they adapted their sharing and caring behaviors according to each patient's preferences. In Article 3, we also showed that interpersonal accuracy tested as emotion recognition skills is related to more behavioral adaptability for female physicians. In sum, this study showed that female physicians who were more skilled in emotion recognition display more behavioral adaptability, which, in turn, is related to more positive outcomes. Moreover, Article 3's study showed that behavioral adaptability is more related to positive outcomes than showing a set of so-called patient-centered behaviors toward every patient. Physician behavioral adaptability model is theoretically a more suitable operationalization of the nowadays advised patient-centeredness approach and our results show that it is indeed more effective than the operationalization of patient-centeredness used thus far. All in all, the present work affords evidence for the effectiveness of the physician behavioral adaptability model and enables us to draw some advice for medical practice.

6.2 IMPLICATION FOR PRACTICE

Because our studies support the effectiveness of physician behavioral adaptability, the first implication for practice is to advise behavioral flexibility in medical encounter. Indeed, in order to show behavioral adaptability, physicians need first to be able to flexibly change their behaviors from one patient to the other. Nowadays, medical communication training tends to teach a definite set of behaviors to apply with every patient (see for instance Epstein & Street, 2007). In Article 3, we showed that the adaptation of behaviors is related to more positive outcomes than displaying high caring and high sharing behaviors to all patients indifferently of their preferences. Thus, medical curricula might consider including training of different interaction style, and not only high caring and sharing behaviors. Nevertheless, the question of the effectiveness of such a training stands. To the best of my knowledge, no training of behavioral flexibility currently exists. As noted by Kiesler and Auerbach (2006), it would be impossible for physicians to master the entire control and affiliation ranges in order to perfectly match

their patients' preferences. Of course, this "perfect" flexibility seems impracticable, but, in any case, perfection can never be achieved in the field of human communication. The studies presented in section 4.3.2 show that physicians do not use the same interaction style with all patients (Hall, et al., 1994; Hall & Roter, 1995, 1998) and have the tendency to flexibly change their behaviors from one patient to the other (R. F. Brown, et al., 2002; Zandbelt, et al., 2006). Enhancing this physicians' behavioral flexibility tendency seems reasonably practicable. Such training would enable physicians to choose from an array of interaction styles the one that best fits the different preferences of each patient and facilitates behavioral adaptability to the uniqueness of every patient. Nevertheless, the feasibility and effectiveness of training different interaction styles must still be confirmed by future studies.

In order to show behavioral adaptability, physicians' should not only flexibly change their behaviors, but also tailor them to the patient's preferences, the physicians need. To do so, physicians need to somehow infer these preferences. In the present work, we argue that interpersonal accuracy would ease this inference and thus enable more behavioral adaptability. Article 3's study showed that female physicians' emotion recognition skills are indeed linked to more nonverbal adaptability. We did not find the same pattern for male physicians, but we can already argue that interpersonal accuracy training would be beneficial for female physicians. As Blanch-Hartigan and Ruben (2013) noted, "a clinician's person perception accuracy is vital because in medical interactions, the ability to accurately judge what a patient is feeling typically precedes the ability to appropriately respond." (Blanch-Hartigan & Ruben, 2013, p. 329). Interestingly, interpersonal accuracy is a skill that can be trained by the general population (Blanch-Hartigan, Andrzejewski, & Hill, 2012) as well as by clinicians (Blanch-Hartigan & Ruben, 2013).

The effectiveness of each type of training has also been evaluated. The most effective way to train interpersonal accuracy is to combine different types of training, such as instructions with practice, practice with feedback, or, even better, instructions with practice and feedback (Blanch-Hartigan, et al., 2012). This kind of training could be integrated in medical curricula in order for physicians to acquire what we could call "communication diagnostic skills." This ability will enable them to correctly assess their patients' preferences and avoid a formal enquiry of these (e.g., with questionnaires). Of course, interpersonal accuracy will not allow the physician to know the patients'

preferences as clearly and precisely as if we directly ask them, but it would avoid a time consuming questionnaire. Moreover, medicine is often described as an art and some authors are afraid that too many strict guidelines on the right behaviors to apply would make medicine too stringent and thus less human (Salmon, 2014). Interpersonal accuracy training would be less dehumanizing, because, unlike a preference questionnaire handed out before the consultation, such training would avoid directions that are too strict for the physicians and let their trained sensitivity lead their behavior.

6.3 LIMITATIONS AND FUTURE RESEARCH

In the following, I will discuss the limitations of the work presented thus far. Some limitations seem difficult to overcome, because of the specificities of the studies conducted. For instance, the presence of a camera could have impacted the physicians' and patients' behaviors during the consultation, but hiding a camera would go against medical ethics. The principal issue nearly impossible to overcome in physician-patient interaction field studies is the sample bias. The two studies presented are no exception.

Our patients' sample is on average older than most of the population (mean age = 50.25 years old for Article 2 and 57.48 years old for Article 3), which is around 10 years older than the median age of the Swiss population (Swiss Federal Statistical Office, 2014). This is due to the fact that practitioners' clientele is naturally older people, because they present more medical issues than the rest of the population. Thus, it is difficult to avoid having a slightly older sample of patient. Nevertheless, it might represent more accurately the population of general practitioners' patients. The inevitable problem with an older sample is that they might have difficulties completing some complicated questionnaire, such as the PPOS we used to measure patients' preferences. Moreover, patient preferences depend on their age (for references of preferences according to age see Kiesler & Auerbach, 2006), so a generally old sample might not present as much variability in patients' preferences as would a sample more representative of the general population.

Regarding our participating physicians, the sample might have been biased by our recruitment process. Indeed, we invited the physician to participate to a "physician-patient communication study." Thus, the physicians who accepted the invitation and participated are most likely physicians already interested in the subject of physician-patient communication. As such, it is very likely that they were on average better

communicators than the majority of physicians. Physicians who are interested in physician-patient communication might indeed be more likely to follow training or to read on the subject. However, except if a scientific superior jurisdiction compels every physician to participate in communication studies, the representativeness of the physician sample is something close to impossible to achieve.

Unlike sample representativeness, some limitations of the present work can be overcome in further studies. Others can offer interesting avenues for future investigations. We will now review them and present potential future research for the concept of behavioral adaptability in the field of physician-patient interaction and beyond.

6.3.1 From physician behavior to patient behaviors

One major limitation of our work is the exclusion of patients' behavior influences on physician behavioral adaptability. In fact, most physician-patient communication literature focuses their studies on the physicians' behaviors, because it heads toward training advice that could enhance the positive impacts of medical encounters. It seems easier to target the physicians' behaviors with training programs than the patients' behaviors. Moreover, the study of patients' behaviors implies the need to get patients' consent to be videotaped. Physicians' agreement to be videotaped is already hard to obtain, but acquiring patients' is even more difficult. Including the videotaping of patients' behaviors would thus complicate the recruitment process. However, medical encounters are dyadic interactions. The behaviors of one partner are thus always influenced by the other's behaviors. Therefore, the inclusion of patients' behavior in physician-patient communication studies must be considered.

In our physician adaptability model, we posit that physicians infer the patients' preferences based on the observed patients' behavior, but we did not measure patients' behaviors in our two studies. Nevertheless, inferring patients' preferences depends on their behaviors and how much they display verbally and nonverbally. Indeed, Street (1991) showed that the patients' behaviors influence the information-giving behaviors of physicians. The more patients asked questions and expressed concern, the more information about the treatment the physicians displayed. Based on the behaviors of the patient's the physicians might have adapted their information giving according to the patients' demands inferred from their behaviors. Of course, Street (1991) did not test

whether the physicians actually adapted their behaviors, because he did not compare the modification of each physician's behaviors from one patient to another. However, it is reasonable to think that more expressive patients are easier to "read." Their physician would thus more easily infer their preferences and the adaptation of behavior is then facilitated. It has indeed been shown that the interactional partners' expressivity influence our ability to infer their characteristics (Hall, Mast, & Latu, 2015). Future research on physician behavioral adaptability should thus integrate a measurement of patients' expressivity.

Street (1991) concludes his paper by noting that the study of physician-patient communication should not exclude patients' behavior, because patient and physician behaviors are mutually influenced by each other. In our physician behavioral adaptability model, we acknowledged how patient and physician behaviors are mutually influenced by each other with the arrow linking physician behavior to patient preferences (see Figure 1). This arrow represents how patients' preferences can be modified by their perception of physicians' behavior. Indeed, the patients might not come into the consultation with great expectations concerning their physician's interaction style, but physician behavior might trigger these expectations and orient patient's preferences. Indeed, imagine an easy-going male patient who is not particularly demanding concerning the level of dominance of his or her physician, but the physician does not greet him when he enters the office and coldly orders him to sit and wait because he is very busy and has to complete the medical form of the previous patients. Because of this very dominant reception, the previously easy-going patient might develop a clear preference for a more sharing and caring interaction.

Our physician behavioral adaptability model conceptualizes how patient behaviors influence physicians' behavioral adaptability, but also how physicians' behaviors trigger changes in the patient preferences. It is thus a loop where patient behavior influences physicians' and vice versa. However, patient behaviors must be measured in future studies to investigate these mutual influences.

6.3.2 From nonverbal adaptability to verbal adaptability

Our empirical testing of physicians' behavioral adaptability failed to find any beneficial effect of verbal adaptability whereas nonverbal adaptability is related to more positive outcomes. This might be explained by a lack of variability in physicians' verbal

behaviors. During their curricula, physicians usually receive communication training. Typically these trainings focus on the verbal content of the medical encounter with few including nonverbal aspects (Cegala & Lenzmeier Broz, 2002). Verbal behaviors are generally more easily controlled than nonverbal behavior, which is more automatic (Knapp, Hall, & Horgan, 2013; Lakin, 2006). Physicians might thus apply the trained skills on the verbal contents of their communication, whereas their nonverbal behaviors stay more flexible. Moreover, the verbal aspects of a medical encounter are more defined by the situation at hand than the nonverbal aspects. For instance, an exploration of the patient's medical history, an investigation of symptoms, and a treatment discussion are recognized as necessary steps in most medical encounters (Clark & Mishler, 1992). Thus, the verbal behaviors offer less possibility of adaptability than the nonverbal behaviors, because it is expected to follow some standard paths. This is supported by our data. A *t*-test of the Article 3's data (not reported in the manuscript) shows that physicians display overall more nonverbal adaptability ($M = 0.29$, $SD = 0.05$) than verbal adaptability ($M = 0.18$, $SD = 0.05$), $t(243) = 1.83$, $p < .05$. Physicians might thus be very limited in their adaptation of their verbal behaviors according to patients' preferences for caring and sharing, because of the verbal guidelines taught and the less flexible nature of consultations' verbal content.

Moreover, the caring and sharing behaviors we focused on might be more related to nonverbal content than other behaviors. For instance, information giving is an aspect of the medical encounter that is almost exclusively verbal. Further studies might investigate more verbally specific behavioral adaptability, which might have a stronger link to consultation outcomes than the kind of verbal adaptability we investigated in the present work. Targeting exclusively caring and sharing dimensions of physician-patient interaction is indeed another limitation of this work.

6.3.3 From physician caring and sharing to other physician behaviors

In Article 2, we focused our analysis on the sharing dimension of medical interactions with physicians' dominance and patients' preferences for paternalism. In Article 3, we added the caring dimension to the sharing one. These two studies yielded slightly different results. We showed that the adaptability of caring and sharing together is not related to consultation outcomes for male physicians. As explained in section 5.2, the male physician behavioral adaptability might not be effective in the caring dimension

of physician-patient interaction. Future studies should thus not only test the adaptability of caring behaviors alone, but also continue to expand the investigation of behavioral adaptability to other behaviors or interaction styles.

One might want to test the adaptability of more medical-specific physicians' behaviors. For instance, the tailoring of physicians' information giving according to patients' preferences for information would be an especially pertinent exploration of physician behavioral adaptability, because it has been shown that patients are generally unsatisfied with the information received (Chaitchik, Kreidler, Shared, Schwartz, & Rosin, 1992; Chan & Woodruff, 1996; Fallowfield & Jenkins, 1999; Lerman et al., 1993; Lobb, Butow, Kenny, & Tattersall, 1999; Quirt et al., 1997). Moreover, patients vary in their preferences for information giving. Most patients want to receive much information (R. F. Brown et al., 2004), but a sizeable portion of them prefer to receive little or no details about their medical issues (Bilodeau & Degner, 1996; Echlin & Rees, 2002). Interestingly, the physicians' adaptation of information giving could be explored according to the quantity of information given (i.e., number of information-giving utterances) as well as the quality of the information (i.e., medical versus everyday language) as both yield importance in patients' decision-making processes (Chaitchik, et al., 1992).

Another possible physician medical-specific behavior to focus on would be the adaptability of shared decision-making. It has indeed been shown that patients vary in their preferences for taking active part in the treatment decisions (Kiesler & Auerbach, 2006) whereas physicians are advised to share the decision with the patient as much as possible (Epstein & Street, 2007). We can hypothesize that an adaptation to patient preferences would be better than a "one size fits all" approach to shared decision-making, but further studies must verify this assumption.

6.3.4 From patient preferences to other patient characteristics

We defined physicians' behavioral adaptability as their ability to modify their behaviors according to the preferences of each patient. However, conceptually, physicians' behavioral adaptability can address not only patient preferences, but all other patient characteristics. Patient characteristics to which physicians could adapt their behaviors to can be trait specific to the person, such as gender, economical status, education, age, personality, or intelligence. Others can be state specific related to the

situation, such as emotions, severity of the illness, stress, pain, or worries. In our definition of behavioral adaptability, we chose to focus on patients' preferences, because it is relative to both the situation and stable characteristics. As such, preferences are dependent on a combination of traits and states. Patients' preferences are thus a comprehensive characteristic for tailoring.

For instance, the severity of the patients' disease might be something to which the physicians want to adapt their communication. Yet, it seems important to adapt ones behavior to the severity of the patient's illness, precisely because it yields different patients' preferences. The literature shows indeed that patients with more severe illness are less willing to be integrated in the decision-making process (Auerbach, 2001; Harvey, Kazis, & Lee, 1999; Kiesler & Auerbach, 2003), prefer to be more passive (Benbassat, Pilpel, & Tidhar, 1998; Street & Wiemann, 1987), and are more tolerant to less affiliative physicians or dominant physicians (Hall, et al., 1981; Street & Wiemann, 1987). So by adapting their behaviors according to patients' preferences for participation in decision-making, passivity, or medical interaction style, physicians will be addressing the individual differences of their patient related to the severity of their illness.

Patients' characteristics like age, severity of illness, gender, or education can thus be seen as moderators of patients' preferences. It has indeed been shown that these characteristics influence patients' preferences (Kiesler & Auerbach, 2006). Future studies might be conducted to confirm this assumption and test how patient's characteristics are related to their preferences and how physicians can adapt their behaviors accordingly.

6.3.5 From emotion recognition to other interpersonal accuracy skills

The physician behavioral adaptability model postulates that more interpersonal accuracy would help physicians make correct inferences of patients' preferences according to the observed patient behavior and thus facilitate behavioral adaptability. In Article 3, we tested whether interpersonal accuracy, measured as emotion recognition, is related to more behavioral adaptability. We found that the more female physicians are able to recognize others' emotions, the more behavioral adaptability they showed during their consultations (marginally significant for nonverbal adaptability). However, for male physicians, we did not find any link between verbal adaptability and emotion recognition. Moreover, nonverbal adaptability was negatively related to male physicians' emotion recognition skills. We explain these results by the fact that men have on average less

knowledge concerning nonverbal behaviors. Thus, using an emotion recognition test as the operationalization of interpersonal accuracy limits our results.

Emotion recognition is just one part of interpersonal accuracy that also includes the correct recognition of status, personality, intentions, intelligence, and all other individual characteristics. It is known that women are generally more skilled in emotion recognition compared to men (Rosip & Hall, 2004). Thus, others' emotions might be an output favored by females whereas males "read" their interactional partners based on other characteristics. Future research might involve studying the link between behavioral adaptability and other tests of interpersonal accuracy than emotion recognition, such as the IPT that measures the ability to correctly infer others' kinship, intimacy, deception, competition, and status (see section 4.3.3.1 for a detailed description of IPT).

6.3.6 From general practice to other medical specializations

In our testing of the physician behavioral adaptability model, we chose to focus on general practice, because general medicine, as its name suggests, is more representative of the "common" medical interaction; the one most people experienced at least once. Moreover, the exploration of a broader field enables us to obtain more generalizable results concerning physician-patient interaction. Nevertheless, the exploration of physician behavioral adaptability in different specializations could enlighten different aspects of the adaptability process.

Oncology, for instance, is a medical specialization that gained much interest in the study of physician-patient communication, because communication is considered as even more important when patients present a life-threatening disease (Arora, 2003). Patients in oncology must deal with the affects, chronicity, uncertainty of the outcome, perspective of death, and treatment choices implied by a cancer diagnosis. All of these issues are more related to the communication competences of the physician than to his or her technical skills (Ong, et al., 1995). As noted by many authors, physicians' communication skills and patient-centeredness are thus especially relevant in oncology (Arora, 2003). As we conceive adaptability as a more appropriate operationalization of patient-centeredness than a set of definite behaviors, it would be particularly interesting to test the beneficial effects of oncologists' behavioral adaptability.

Obstetrics and gynecology medicine seem also to be a specialization where behavioral adaptability would be particularly pertinent. Because this specialization

implies sexuality issues, patients' prudishness concerning their nudity and their sexuality is something the gynecologists must deal with on a daily basis. An adaptation of communication according to the way the patient deals with her body is thus essential. Moreover, in obstetrics and gynecology, the demands and issues presented by the patients vary highly according to their age. Physicians might thus need to adapt their care accordingly.

Surgery would also be a relevant specialization to investigate behavioral adaptability and more precisely verbal adaptability. Indeed, surgery implies usually less direct interactions with the patients than general practice. However, the encounter between surgeons and patients before the surgery is essential according to explanations and information giving, and a well done pre-surgery encounter can alleviate the patients' anxiety (Auerbach, Kendall, Cuttler, & Levitt, 1976). Moreover, it has been shown that the anxiety of patients was even more alleviated if the physicians' information giving matched the patients' preferences for information (Auerbach, Martelli, & Mercuri, 1983). It would thus be interesting to test whether the surgeon adaptation of his or her information giving from one patient to the other is related to less patient anxiety.

Psychiatry is definitely a domain where adaptability seems essential, because the psychiatric patients present highly different functioning according to their psychopathologies. Future research might want to explore how psychiatrists adapt their behaviors according to the patient mental disease. It seems obvious that communicating with a psychotic patient should be different to a depressive one.

6.3.7 From physician-patient interaction to other interactional contexts

Theoretically, the concept of behavioral adaptability can be applied to any human interaction. Nevertheless, the physician-patient interaction has the advantage of presenting a clear goal, measurable output, and somewhat clear preferences.

In other contexts, it might be trickier to hypothesize which behaviors need to be adapted and in which direction. For instance, we conducted a study on adaptability of speech in a virtual setting. Participants presented a convincing speech first in front of a virtual student audience and then in front of a virtual professor audience. We wanted to test whether the more the participant adapted their behaviors according to the type of audience, the more convincing his or her speech would be evaluated. The problem we faced is that we do not really know which behaviors are more adapted to a professor

audience and which are more adapted to a student audience. For instance we do not know whether it is more appropriate to speak more loudly with a professor audience or with a student audience. Our hypothesis thus could not be tested, because adaptability is more than just an observed change of behaviors from one interaction partner to the other. The behavioral change has to be adapted; it has to be the right behavior according to the partner. Testing the effect of a change in behavior does not hold much significance if we do not know in which direction this change should be done. Future investigation of behavioral adaptability should thus be based on a formal assessment of the interactional partners' expectations or on previous findings noting how behaviors can be adapted appropriately. We used the latest in our ongoing investigation of behavioral adaptability out of the physician-patient field.

In this study, we decided to base our test of adaptability on existing findings showing which behavior is more beneficial according to the interaction partner's specificities. We wanted to test the effectiveness of feedback-giving adaptability according to the goal orientation of the subordinates. Van-Dijk & Kluger (2004) showed that promotion-oriented subordinates (i.e., focused on accomplishments and rewards) are more motivated to do better if they receive positive feedback (i.e., description of their achievements). Conversely, prevention-oriented subordinates (i.e., punishment avoiders who have short-term perspectives, minimal goals, and try to maintain the current situation) are more motivated to improve their performance if they receive negative feedback (i.e., description of their weaknesses). We thus asked participants to give two feedback sessions in front of two different subordinates. One was described as promotion-oriented and the other as prevention-oriented. We will then code the positivity/negativity of the comments and test whether a better fit between the arguments and goal orientation of the subordinate is linked to more subordinate motivation. We hypothesize that the more positive the arguments toward the promotion-oriented subordinate (compared to the prevention-oriented subordinate), the more motivated to improve their performance the subordinates will be.

This study is only one example of how behavioral adaptability could be tested in other settings than physician-patient interactions. Of course, greater exploration of behavioral adaptability can be done in various contexts, such as leadership, education (adaptability of teachers), couples, family interactions, or sales.

7 CONCLUSION

In our unquestionably social world, we interact with hundreds of different people who are by definition unique. The ability to adapt our behaviors to these interaction partners seems therefore essential. Behavioral adaptability is especially pertinent in medical encounters where communication has been shown consequential for the well-being of the patients. The tailoring of behaviors has been conceptualized to some extent, but the present work is the first to test the impact of actual modification of physicians' behaviors according to different patients' preferences.

The two studies presented in this dissertation indicate that the more physicians adapt their behaviors to their different patients' preferences, the more positive the consultation outcomes are for the patients. This enables us to advise the integration of behavioral flexibility and interpersonal accuracy trainings in medical curricula. Such training would help physicians implement in their daily practice a patient-centeredness as originally defined by adapting their behaviors to their patients' preferences. Nevertheless, some inconsistencies in our findings concerning gender difference and verbal versus nonverbal adaptability necessitate further examination of behavioral adaptability.

The presented work states the beneficial effect of being a behavioral chameleon and there are many possibilities for further explorations of behavioral adaptability. Such studies would not only provide more evidence for the effectiveness of physician behavioral adaptability process, but also expand our understanding of this concept by widening its scope to other physicians' behaviors, different patient preferences, more medical specializations, and even beyond the field of physician-patient interaction. The future for the concept of behavioral adaptability is thus broad and rich.



8 REFERENCES

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10 ANNEXES

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Carrard, V., & Schmid Mast, M. (2015b). Physician behavioral adaptability: A model to outstrip a “one size fits all” approach. *Patient Education and Counseling*, 98(10), 1243–1247. doi:10.1016/j.pec.2015.07.028

ARTICLE 2

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ARTICLE 3

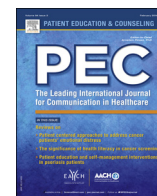
Carrard, V., Schmid Mast, M., Jaunin-Stalder, N., Junod Perron, N., & Sommer, J. (2016). *When adaptability is better than more caring and sharing: Patient-centeredness as behavioral adaptability to patient preference*. Manuscript submitted for publication.

BOOK CHAPTER

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ARTICLE 1

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Physician behavioral adaptability: A model to outstrip a “one size fits all” approach



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ABSTRACT

Objective: Based on a literature review, we propose a model of physician behavioral adaptability (PBA) with the goal of inspiring new research. PBA means that the physician adapts his or her behavior according to patients' different preferences. The PBA model shows how physicians infer patients' preferences and adapt their interaction behavior from one patient to the other. We claim that patients will benefit from better outcomes if their physicians show behavioral adaptability rather than a “one size fits all” approach.

Method: This literature review is based on a literature search of the PsycINFO[®] and MEDLINE[®] databases. **Results:** The literature review and first results stemming from the authors' research support the validity and viability of parts of the PBA model. There is evidence suggesting that physicians are able to show behavioral flexibility when interacting with their different patients, that a match between patients' preferences and physician behavior is related to better consultation outcomes, and that physician behavioral adaptability is related to better consultation outcomes.

Practice implications: Training of physicians' behavioral flexibility and their ability to infer patients' preferences can facilitate physician behavioral adaptability and positive patient outcomes.

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1. Introduction

Researchers in the field of physician–patient communication have invested considerable time and effort in the quest for best practices for physicians. Many agree that patient-centered communication is the best communication approach. Patient-centered communication entails the physician adopts the patient's perspective, addresses emotional aspects and shows empathy, as well as taking shared decisions and establishing a partnership in the physician–patient relationship [1,2]. Physicians who adopt such a patient-centered interaction style have patients with better subjective and objective medical consultation outcomes (e.g., satisfaction, trust, adherence, health improvement [3–6]). However, the findings are not unequivocal and some studies show contradictory or inconsistent results with respect to the benefit of patient-centered physician communication for patient outcomes [7–9]. Despite this not completely clear situation, best practice guidelines and communication trainings for physicians typically imply a patient-centered approach understood as a series of well-defined verbal and nonverbal behaviors for the physician to adopt,

such as “eliciting and validating the patient's emotions”, “avoiding interruptions”, “forward lean to indicate attentiveness”, or “maintaining eye contact” [10,p. 4].

Such best practice imperatives come with the disadvantage that they ignore a core aspect of the essence of patient-centeredness which is taking into account that each patient prefers a different interaction style. Patient-centeredness implies the notion of taking the perspective of each patient and—more importantly and often overlooked—of adapting the interaction behavior to each patient individually [11]. Indeed, not every patient benefits from a patient-centered physician communication style. Research shows that the relation between physicians' patient-centeredness and patients' outcomes depends on patients' characteristics. For instance, moderately anxious patients were less anxious when facing physician showing more patient-centeredness, but that more anxious patients' level of anxiety increased when facing the same kind of physicians [12]. Similarly, compared to less anxious patients, more anxious patients showed more tolerance for physicians perceived as more angry [13] or dominating [14]. So there seems to be no “one size fits all” in physician–patient communication confirming Epstein and Street's claim that “One key defining element of effective patient-centered communication is the clinician's ability to monitor and *consciously* adapt communication to meet the patient's needs” [10,p. 7].

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We thus posit that in order to be patient-centered, physicians should flexibly change their behavior from one patient to the other in order to meet each patient's particular preference in terms of physician interaction style. For instance, if a physician faces a patient who prefers a more paternalistic interaction style, he or she should be able to take the lead of the consultation with this particular patient and display more dominance behaviors like speaking more than the patient and setting the agenda, to mention just some examples. In another consultation, the same physician might face a patient who prefers more partnership in the physician-patient interaction and the physician should then be able to exhibit a more egalitarian interaction style such as making sure that the patient obtains equal amounts of speaking time and including the patient in the treatment decision-making process. We coin the term physician behavioral adaptability (PBA) to label a physician's ability to flexibly change his or her verbal and nonverbal behavior when facing different patients and to adapt his or her behavior according to the patients' different preferences.

The idea that PBA is an important factor of patient-centered care is not new, of course, and the inclusion of it in existing definitions and descriptions of patient-centeredness testifies to this. What is missing is more complex and comprehensive understanding of the mechanism of PBA and the empirical research that accompanies it. To date, there is only scarce research focusing on how physicians change and adapt their communication style from one patient to the other and how this affects patient outcomes. In the current paper, we develop a model of physician behavioral adaptability (PBA model) that is based on a literature review and on initial empirical data. The PBA model is useful for the understanding of the underlying mechanisms of behavioral adaptability and to guide future for research in this domain. We make the argument that PBA is an important factor of patient-centered communication that has so far been mostly overlooked.

1.1. Physician behavioral adaptability (PBA)

In order to show behavioral adaptability, the physician needs to correctly infer the patients' preferences and then attune his or her verbal and nonverbal communication to those preferences. We will look at this process in more detail in the PBA model (Fig. 1): during the medical encounter, the physician draws inferences about the patient's preferences based on the verbal and nonverbal behavior and the appearance cues emitted by the patient when interacting with the physician. Whether those inferences are correct depends on the physician's interpersonal accuracy defined as the ability to correctly assess others' traits and states based on their behaviors and appearance [15]. If the physician sees the patient for the first time, this is all the information available to the physician for inferring the patient's preferences. If the physician knows the patient or has patient information stemming from a referral or a colleague, this knowledge influences the inferred patient preferences on top of the actual verbal, nonverbal, and appearance cues the patient exhibits during the medical visit.

Based on the inferences, the physician chooses the behavior he or she wants to exhibit. To display behaviors that will correspond to the patient's preference, the physician has to be able and willing to show the communication behavior that fits those preferences. Given that different patients have different preferences, the physician needs to master an array of different communication behaviors; he or she needs to possess what we call *behavioral flexibility*.

The patient perceives the physician's behavior and compares it to his or her actual preferences. To the extent that the physician's behavior is in line with the patient's actual preferences, the physician shows adaptive behavior.

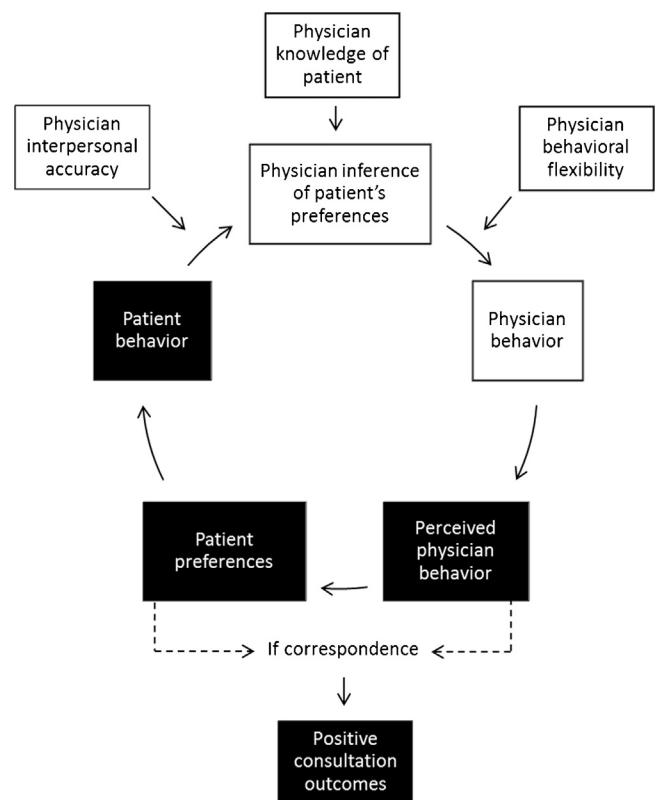


Fig. 1. The physician behavioral adaptability (PBA) model.

The black squares display the steps occurring on the patient's side and the white squares those happening on the physician's side.

Note that patient preferences are also influenced by the perception of the physician's behavior. Indeed, many theories and models point to the mutual influence of interactional partners' behaviors (see for example the Communication Accommodation Theory [16] or the Ecological Model of Communication [17]). In the medical interaction, patient's behavior influences the physician and the physician's behavior influences the patient as well. The loop construction of our model acknowledges this mutual influence.

As shown in Fig. 1, we posit that PBA will have positive outcomes for the patients. Expectancy Violation Theory (EVT [18]) theorizes that interaction outcomes are a consequence of expectations and preferences. Interestingly, the authors posit that expectations and preferences are two different concepts impacting on the outcomes at different stages of the assessment of the interaction. EVT posits that people naturally form expectations about their interaction partner's behaviors based on context, relationship, and communicator characteristics. If those expectations are met, the interaction is evaluated in a positive way. If the interaction partner's behaviors violate the expectations of a person but meet his or her preferences, the outcomes are evaluated as even more positive. If the expectations are violated and the preferences are not met, the outcomes are evaluated in a negative way [19]. We claim that PBA will lead to better consultation outcomes, because meeting patient's preferences will lead to positive interaction outcomes despite potential expectations violation.

2. Method

The main focus of this paper is to develop a model of physician behavioral adaptability that is based in relevant existing literature.

To this end, the PsycINFO® and MEDLINE® databases were searched for published articles including the words “correspondence”, “congruence”, “matching”, “tailoring”, or “adaptation” in combination with “patient and physician” in their titles or keywords. Among the 1611 articles found; we retained the empirical studies related to PBA. In the end; we choose to exclude the research related to correspondence between patients’ and physicians’ characteristics; beliefs; or behaviors. Indeed; correspondence studies are not strictly speaking studies of PBA; because they do not look at physician behavior in relation to patient preferences. Correspondence studies investigate how consultation outcomes are affected when patients and physicians share certain characteristics (e.g.; gender; race); beliefs; or behaviors (see for example [20,21,22]).

Given the definition of PBA, we will focus on presenting and discussing studies that have addressed how physician behavior that matches patient preferences is related to better consultation outcomes. We will also examine the literature on physicians’ ability to change their behavior across patients (behavioral flexibility) and we will discuss first empirical evidence for the positive effect of PBA exhibited across different patients and indicate future directions of research in this field.

3. Results

3.1. Physician behavior matched to patient preferences

Some studies have addressed patient outcomes when the physician’s behavior matches the patient’s preferences in terms of physician interaction style. Concerning patients’ preferences for information during the medical visit, Kiesler and Auerbach’s literature review [23] shows that although patients were on average dissatisfied with the amount of information given by their physicians, the better the match between patients’ preferences for information giving and physicians’ actual information provision, the better the patients’ outcomes (physiological measures or rating of patient’s behavior like for example adjustment). Further studies corroborate these results [24,25]. Notably Cvengros and colleagues [26] confirmed that diabetic patients have better diabetic control when physician behavior matches their preference for information sharing, shared decision-making, behavioral involvement, and self-management in health care. However, tailoring the information provision to the preferences of the patient is not always related to better patient outcomes. For instance, radiation oncologists adapting the amount of information they provided to what the patient indicated as his or her information preferences, did not affect patient outcomes [27].

Patients not only have preferences with respect to how much information they want, they also have preferences for certain physician interaction styles. To illustrate, physicians’ participatory behaviors and caring behaviors have been shown to be linked to better satisfaction if they match the patients’ preferences for such interaction behavior [26] and patients are more satisfied with their physicians when there is congruence between the actual communication style a physician adopts and the physician communication style desired by the patient [2,28]. These results suggest that patients have better consultation outcomes when physicians display behaviors adapted to their patients’ preferences for certain physician communication styles.

The studies reviewed so far did not test the physicians’ ability to change their behavior between two different patients with different preferences. In order to match their behaviors to the patients’ different preferences, physicians need to be able to

flexibly adopt different communication styles toward different patients.

3.2. Physician behavioral flexibility

An important factor of what we understand by PBA is that the physician changes his or her behavior when interacting with patients with different preferences (physician behavioral flexibility). Research shows that physicians typically are able to display different behaviors towards different patients. For instance, physicians display different interaction styles according to the gender of the patient they are facing. Physicians exhibit a more egalitarian interaction style and are more emotionally engaged toward female patient as compared as toward male patients [29,30,31]. One could say that they adapt their communication style to the stereotypical beliefs about women and men. Although this is not behavioral adaptability, it shows behavioral flexibility of the physicians.

One interesting study [32] explored how physicians vary their patient-centered behavior according to the characteristics of the patients. The researchers used intra-class correlation scores (ICC) in order to measure the flexibility/rigidity of each physician’s facilitating (e.g. encouragements, questions, or summary) and inhibiting behaviors (e.g. criticism, interruptions, or changing the subject). The ICCs ranged from 0.18 to 0.20 meaning that the physicians were not applying the same behaviors to every patient while at the same time showing a certain consistency across the different consultations [32].

This study illustrates that physicians are able to change their behavior according to their different patients. However, being able to vary one’s behavior is necessary, but not sufficient for showing behavioral adaptability. Indeed, PBA implies that the variations of the behavior fit the patient preferences. Whether the individual differences in changing the interaction behavior according to the patient are really adaptive (i.e., corresponds to the preferences of the patient) and whether they are related to better patient outcomes has not yet been sufficiently tested.

3.3. Empirical evidence for the positive effect of PBA

There is nevertheless initial evidence supporting the PBA model. We investigated 32 general practitioners who were videotaped during 2 consultations, each with a different patient [33]. Physicians’ nonverbal dominance behaviors (e.g. speaking time or loudness of voice) were coded based on the videotaped consultations and patients indicated how much they prefer the physician to use a paternalistic communication style. Patients also filled in a questionnaire about consultation outcomes (patients’ evaluation of satisfaction, trust in the physician and physician’s competences). We then tested the relation between consultation outcomes and the degree to which a physician showed dominance behaviors to a patient preferring more paternalism as compared to a patient preferring less paternalism. To do so, we computed behavioral adaptability scores for each behavior coded. Those scores were the difference between the percentage of dominance behavior presented when interacting with the patient preferring more paternalism minus the percentage of the same behavior presented when with the patient preferring less paternalism. Results show that the more dominance behavior the physicians displayed toward their patients preferring more paternalism as compared to their patient preferring less paternalism (thus the more the physician shows behavioral adaptability), the more positive the consultation outcomes were [33]. This constitutes first evidence that in fact, PBA can play an important role for patients.

4. Conclusions

The here proposed PBA model awaits further empirical testing. While we know that physicians differ in how variable they are in their communication styles across different patients, we do not know whether this variability consistently affects patient outcomes in a positive way as suggested by our model. Although we present initial support for such a link, much work needs to be done. As we mentioned earlier, physician adapting the amount of information provided to patients in an oncology setting was not related to better consultation outcomes [27]. The oncology setting is very different from the general practitioner setting. Maybe the life-threatening context of oncology make patients under- or overestimate the amount of information they would like which might explain why there was no link with patient satisfaction. The discrepant findings also raise another important question: adaptive with respect to what? Depending on whether we investigate physician adaptability with respect to the amount (and/or complexity) of the information given or with respect to his or her nonverbal behavior (as in the study cited in the previous section) might make a difference. Nonverbal behavior typically is less under conscious control than verbal behavior and maybe our model works better for nonverbal behavior adaptability.

Given that being able to accurately infer the patients' preferences is important for PBA (Fig. 1), future research might want to include a measure of physician interpersonal accuracy along with behavioral adaptability. Interpersonal accuracy has been shown to positively affect patient outcomes [34,35]. So maybe these positive outcomes can be explained by the fact that the ability to correctly reading others enables the physician to adapt his or her behavior according to the different patients' preferences. In other words, it is possible that PBA is a mediator of the link between the physician's interpersonal accuracy and patient outcomes.

4.1. Practice implications

The focus on the flexible use of different communication styles and the necessity to correctly assess patient's preferences, both inherent elements of PBA, have concrete implications for physician training. To facilitate PBA, the medical curriculum might want to include communication flexibility rather than training of a strict set of behaviors to apply with every patient. In order to show behavioral adaptability, physicians should master a wide range of different interaction styles to apply according to the particular patient they are facing. They might benefit from the ability to adopt a more paternalistic role when facing a patient who prefers passivity and a more partnership-oriented communication style when consulting with a patient preferring egalitarianism. Even if each physician has his or her own style with which he or she feels most confident and comfortable [36,37], adding more behavioral options through training is possible [38] and would enable physicians to increase the number of communication tools at hand and to fine-tune them for the benefit of their patients.

Knowing when to use which style is another skill that physicians need to possess in order to use the widened communication toolkit effectively. It has been suggested that patient preferences or personality should be assessed systematically before each consultation [23,39]. This can either be done by asking the patients and then hand the information to the physicians in order to help them match their behaviors to their patient's preferences or it can be assessed by the physician during the interaction with the patient. The latter is possible if the physician is interpersonally accurate. There is an increasing number of voices advocating physician training in interpersonal accuracy [34]. Research shows that interpersonal accuracy is

effectively trainable [40] and we posit that this skill would enable physicians to infer automatically and accurately their patients' preferences which in turn would facilitate PBA and practical implementation of patient-centered care.

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Conflicts of interest

The authors declare no conflict of interest and have approved the final article.

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ARTICLE 2

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Beyond “one size fits all”: Physician nonverbal adaptability to patients’ need for paternalism and its positive consultation outcomes

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ABSTRACT

In this study, we tested whether physicians’ ability to adapt their nonverbal behavior to their patients’ preferences for a paternalistic interaction style is related to positive consultation outcomes. We hypothesized that the more physicians adapt their nonverbal dominance behavior to match their patients’ preferences for physician paternalism, the more positively the patients perceive the medical interaction. We assessed the actual nonverbal dominance behavior of 32 general practitioners when interacting with two of their patients and compared it with each of their patients’ preferences for paternalism to obtain a measure of adaptability. Additionally, we measured patient outcomes with a questionnaire assessing patient satisfaction, trust in the physician, and evaluation of physician competence. Results show that the more nonverbal dominance the physician shows toward the patient who prefers a more paternalistic physician, as compared to toward the patient who prefers a less paternalistic physician (i.e., the more the physician shows nonverbal behavioral adaptability), the more positive the consultation outcomes are. This means that physicians’ ability to adapt aspects of their nonverbal dominance behavior to their individual patients’ preferences is related to better outcomes for patients. As this study shows, it is advantageous for patients when a physician behaves flexibly instead of showing the same behavior towards all patients. Physician training might want to focus more on teaching a diversity of different behavior repertoires instead of a given set of behaviors.

There is widespread agreement that physicians should interact with their patients by using a patient-centered communication style (Epstein, 2000). Patient-centered communication has been documented to be beneficial for both the patient and the physician. Patients who see a patient-centered physician are more satisfied with the consultations (Bensing et al., 2001), trust the physician more (Aruguete & Roberts, 2000), adhere better to the physician’s treatment recommendations (Robinson, 2006), and are less likely to sue their physician for malpractice (Ambady et al., 2002).

Patient-centeredness is described as care that “respects the individuality, values, ethnicity, social endowments, and information needs of each patient. . . . The aim is customization of care, according to individual needs, desires, and circumstances” (Berwick, 2002, pp. 84–85). Despite the emphasis on customizing or adapting to each patient, the literature on patient-centered communication often describes a given set of physician behaviors that are linked to positive patient outcomes. Typically these behaviors encompass smiling and nodding, probing for patient emotions, and creating an egalitarian rather than hierarchical relationship (Stewart et al., 1995). If we take the patient’s perspective seriously, it becomes clear that there is no “one size fits all.” Not all patients benefit from one and the same physician communication style to the same extent. For instance, assertive individuals are more satisfied

with a physician who takes more time to explain the rationale of the treatment recommendation (Braman & Gomez, 2004). The anxiety level of mildly anxious individuals decreases when they face a patient-centered physician, whereas the anxiety level of more anxious individuals increases in the same situation (Graugaard & Finset, 2000). In the same vein, more anxious patients have a more pronounced tolerance for physicians whom they perceive as angry (Hall, Roter, & Rand, 1981) or dominating (Street & Wiemann, 1987) than less anxious patients. The more agreeable the patient, the more he or she benefits from a physician who adopts an affiliative nonverbal communication style (e.g., looking at patient, smiling, or nodding) as compared to a nonaffiliative style (Cousin & Schmid Mast, 2013).

Given that not all patients benefit from the same physician interaction style, we suggest that the physician who can flexibly adapt his or her communication behavior to fit each patient’s preferences will have patients who experience on average more positive consultation outcomes. This is in line with Epstein and Street: “One key defining element of effective patient-centered communication is the clinician’s ability to monitor and *consciously* adapt communication to meet the patient’s needs” (2007, p. 7, emphasis in original). “Adapt” is the important word here. A physician who tailors his or her verbal and nonverbal communication

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according to the specific needs and preferences of his or her patients shows what we call *behavioral adaptability*.

Physician behavioral adaptability

Communication Accommodation Theory (CAT; Giles, Coupland, & Coupland, 1991) posits that when communicating, people use verbal and nonverbal behavior to accommodate others. Accommodation can occur through two processes: convergence, which reduces differences among the social interaction partners, and divergence, which amplifies such differences. Research on CAT also demonstrates that communication outcomes are more positive if there is convergence (McCroskey & Richmond, 2000). Convergence and divergence not only happen with respect to a social partner's behavior but also with respect to his or her expectations. When there is convergence to another person's expectations, Expectation Confirmation Theory (Jiang & Klein, 2009) comes into play. This theory claims that a person's satisfaction is increased if his or her expectations are met. Several studies have empirically shown that these predictions hold true (Appleton-Knapp & Krentler, 2006). Taken together, these theories suggest that the more a physician adapts his or her behavior to patient preferences, the more positive is the medical interaction outcome for the patient. There is indeed evidence showing that patients are more satisfied when their preferences are met by the physician's behaviors. Patients are more satisfied when the physician's behavior matches their preferences for information giving (Kiesler & Auerbach, 2006), for participation (Cvengros, Christensen, Cunningham, Hillis, & Kaboli, 2009), and for interaction style (Cousin, Schmid Mast, Roter, & Hall, 2012).

The notion of physician behavioral adaptability encompasses more than just better or worse average convergence of the physician's behavior to the patient's preferences; it contains the idea that a physician flexibly changes his or her behavior and adapts to what different patients prefer. We define physician behavioral adaptability as the physician's ability to change his or her behavior across different patients so that the behavior corresponds to the preferences of each individual patient. A fair test of physician behavioral adaptability is thus the observation of the behavioral change of a physician when confronted with patients harboring different preferences. Most of the existing studies on physician behavioral convergence have not looked at whether the physician changes his or her behavior according to the differences in patients' preferences. The goal of the present study is to investigate whether physician behavioral adaptability is related to better patient outcomes. Showing such a link would open a promising new avenue for research and for physician training. If adaptability is key, then physician training should not focus exclusively on physicians mastering the list of behaviors associated with patient-centered communication. Rather, physicians should additionally be trained in mastering an array of different communication behaviors, including non-patient-centered communication (e.g., paternalistic communication styles).

The vertical dimension of social interactions

The interpersonal circumplex model is a classification system enabling the description and organization of interpersonal behavior, traits, and motives along two orthogonal dimensions: control and affiliation (Kiesler & Auerbach, 2003). The control dimension—sometimes referred to as the vertical dimension—defines where on the power distribution a person stands. The affiliation dimension—also called the horizontal dimension—spans from hostility to friendliness and defines how agreeable a person is (Kiesler & Auerbach, 2003).

The vertical dimension is prominent in many respects in the physician–patient interaction. For one thing, being a doctor is a high-status position and patients consulting a doctor are typically in a weaker and thus subordinate position because they seek advice, are often in pain, and are vulnerable. The way power plays out in the physician–patient interaction can vary. Patient-centeredness implies egalitarianism and partnership between the physician and the patient. The opposite interaction style—paternalism—is characterized by the physician having control and the patient being passive and uninvolved. Paternalism is the “traditional” physician interaction style, based on the biomedical model of care (Engel, 1977). Although this style has largely—and rightly so—been replaced by a biopsychosocial approach characterized by patient-centered care, some patients prefer a paternalistic physician. Male, older, less educated, and more ill patients typically prefer a more paternalistic physician interaction style (Benbassat, Pilpel, & Tidhar, 1998).

In the present study, we are interested in the vertical dimension of social interactions because it has gained relatively little research attention in the study of physician–patient interaction compared to the horizontal dimension (Schmid Mast, 2004). Moreover, research shows that a physician's high affiliative behavior is related to more positive patient outcomes independent of the patient's attitude toward affiliation, whereas a physician's low control behavior is related to positive outcomes only for patients valuing this attitude (Cousin et al., 2012). With respect to adaptability, it is therefore possible that a physician's behavioral adaptability is related to positive outcomes particularly on the vertical dimension.

Physician nonverbal dominance

Verbal behavior can more easily be controlled than nonverbal behavior (Choi, Gray, & Ambady, 2005). Besides, physician training typically focuses on avoiding physician display of dominance and such training is mostly based on verbal content (Cegala & Lenzmeier Broz, 2002). Thus, if the physician expresses dominance, it more likely happens through the nonverbal channel. Indeed, dominance has been shown to be related to nonverbal rather than to verbal cues (Berry, Pennebaker, Mueller, & Hiller, 1997). This is why we focus on physician nonverbal behavior in the present study. We chose seven physician nonverbal behaviors that have been shown to be related to perceived dominance in the general population and in physicians (Hall, Coats, & Smith LeBeau, 2005; Schmid Mast, Hall, Cronauer, & Cousin, 2011): louder voice, more physician speaking time, more gazing at the notes or computer, less gazing at

the patient, less nodding, less smiling, and more visual dominance.

The present study

To measure behavioral adaptability as we define it, a physician needs to be observed while interacting with a minimum of two patients who differ in needs and preferences. Only the physician who changes behavior from one patient to the other has behavioral adaptability. As an example, if one patient prefers the physician to communicate in a rather paternalistic way and another patient prefers the physician to communicate in a less paternalistic way, the physician who is able to adapt to these different preferences will show more behavioral adaptability (e.g., speak more loudly to the patient who prefers a paternalistic interaction style and speak more softly to the patient who prefers a less paternalistic interaction style). We assess a physician's level of behavioral adaptability as an individual difference measure (described in more detail in the Method section) and link it to the consultation outcomes reported by several (in our study, two) of the physician's patients. We hypothesize that the more a physician shows behavioral adaptability, the better the patient consultation outcomes are.

Method

Physicians

Seventy-two general practitioners in the French-speaking part of Switzerland were contacted by mail or phone for voluntary participation. Thirty-three of them agreed to participate in the study. One physician had to be excluded from the analysis, because one of her patients did not fill in the preference questionnaire. The final physician sample was therefore composed of 32 participants (18 men and 14 women) with a mean age of 46.56 years (range: 34–63) and with on average 19.53 years of practice experience (range: 9–36).

Patients

For each physician, two of his or her patients participated in the study (one female and one male patient per physician with one exception: One physician was videotaped with two male patients instead of one female and one male patient). In total, 64 patients completed the study (33 men, 31 women). The exclusion criteria for patients were age less than 18 years, not fluent French speaker, having a psychiatric disorder, or having consulted the physician more than four times in the past. Patients included in the study varied in age from 20 to 84 years old ($M = 50.25$ years old) and consulted their physician for different reasons (e.g., checkup, back pain, hypertension). On average, they saw a physician between two and three times a year and were seeing this particular physician for the second time.

Procedure

Physicians signed an informed consent form and agreed to be videotaped during two consultations with two of their patients.

Patients were approached in the waiting room by the investigator and asked whether they would participate in the study. Patients were then handed an informed consent form to sign. They were informed that the physician would be filmed during the consultation and that they would not appear in the video but that their voice could be heard on the recording. Additionally, patients were informed that after the medical interaction, they would be asked to fill in a questionnaire measuring how they perceived the consultation and their preferences in terms of how paternalistic the physician should behave toward them. Patients also reported how frequently they saw a doctor and the number of previous visits with this particular physician, their gender, and age. The procedure of this research was reviewed and approved by the regional (Canton of Vaud) research ethics committee. Data from this study unrelated to the present research question have been published elsewhere (Cousin, Schmid Mast, & Jaunin-Stalder, 2013a, 2013b). External raters coded physician nonverbal behavior during medical interactions based on the videotapes.

Measures

Patient preference for paternalism

To assess the degree of each patient's preference for the physician to behave in a paternalistic way, we reversed the sharing subscale of the Patient–Practitioner Orientation Scale (PPOS; Krupat, Yeager, & Putnam, 2000). This subscale measures the patient's preference for the physician sharing power (Krupat et al., 2000). Thus, the reverse of the subscale indicates how much the patient wants a particular physician to show paternalism (i.e., limit the amount of information given to the patient and not involve the patient in the decision-making process). The PPOS inversed sharing subscale contains nine items on a scale of 1 (*not at all*) to 5 (*very much so*). Sample items are: “The doctor is the one to decide what is to be discussed during a doctor's appointment” or “Patients should be treated as partners, equal in power and status” (reversed item for our paternalism measure). Items were averaged and larger values indicate that the patient wishes to be addressed in a rather paternalistic way by the physician (Cronbach's $\alpha = .66$, $M = 2.53$, $SD = 0.64$).

Physician nonverbal behavior

Based on the videos of the medical interactions, external raters (all blind to the communication style preferences of the patient and to the hypothesis of this research) coded seven nonverbal behaviors: visual dominance, loudness of voice, speaking time, gazing at the notes or computer, gazing at the patient, nodding, and smiling. The coding of physician nonverbal behavior as well as means and standard deviations are described in Table 1.

For smiling and loudness of voice, global ratings were used. Two raters attended a short 1-hour training session on the definition of smiling and loudness of voice and on how to use the rating scale. Both raters coded all videos and their ratings were averaged. Cronbach's α was .67 for smiling and .75 for loudness of voice.

Physician visual dominance, speaking time, gazing at the notes, gazing at the patient, and nodding were all coded by two

Table 1. Coding of physician nonverbal behavior with means and standard deviations.

Visual dominance ($M = 0.93$, $SD = 0.22$): Ratio of percentage of looking while speaking to percentage of looking while listening (Dovidio & Ellyson, 1982). Percentage of seconds the physician was gazing at the patient while speaking divided by the percentage of seconds the physician was gazing at the patient while the patient was speaking.
Loudness of voice ($M = 2.38$, $SD = 0.24$): Amplitude of the voice, coded for each minute of the interaction on a 5-point Likert scale (1 = <i>used a soft voice</i> to 5 = <i>used a very loud voice</i> ; normal/natural loudness of voice is rated as 3) and then averaged across all minutes
Speaking time ($M = 0.51$, $SD = 0.20$): Duration (in seconds) of physician speaking, expressed in percentage of the total medical consultation duration
Gazing at the notes or computer ($M = 0.38$, $SD = 0.21$): Duration (in seconds) of gaze focusing on a part of the physician's desk or computer expressed in percentage of the total medical consultation duration
Gazing at the patient ($M = 0.50$, $SD = 0.26$): Duration (in seconds) of gaze focusing on the patient's head expressed in percentage of the total medical consultation duration. The patient cannot be seen on the video; therefore, the position of the patient's head was estimated by using the patient's voice and the physician's nonverbal cues (e.g., gaze when welcoming the patient).
Nodding ($M = 0.03$, $SD = 0.03$): Duration (in seconds) of upward/downward motion of the head on a vertical plane expressed in percentage of the total medical consultation duration
Smiling ($M = 2.72$, $SD = 0.38$): Upward extension of the lips displaying warmth and/or agreeableness, coded for each minute of the interaction on a 5-point Likert scale (1 = <i>never smiled</i> to 5 = <i>smiled a lot</i>) and then averaged across all minutes

other raters who attended a one day training session on coding. Raters coded the onset and offset of each of the five aforementioned behaviors and we then extracted the total duration (in seconds) of each behavior and expressed it as the percentage of the duration of the entire medical encounter. Each videotape was coded by only one rater because prior established interrater reliability was good, ranging from $r = .55$ to $r = .99$.

Physician nonverbal behavioral adaptability

We measured physicians' nonverbal behavioral adaptability scores in the following way: Based on the patients' preferences for paternalism, we were able to identify which of the two patients of any one doctor wanted more paternalism than the other. We then looked at whether the physician actually showed relatively more dominance behavior to the patient who wanted more paternalism than to the other patient (the one who preferred less paternalism). For visual dominance, loudness of voice, physician speaking time, and physician gazing at notes (all positively related to physician dominance in the literature), we subtracted the amount of the specific behavior shown toward the patient preferring less paternalism from the amount of the same behavior shown toward the patient preferring more paternalism. Higher values indicate that the physician showed increased nonverbal adaptability, because he or she showed a more dominant behavior toward the patient who wanted more paternalism as compared to the patient who wanted less paternalism.

Because smiling, nodding, and gazing at the patient are negatively related to physician dominance, we subtracted the amount of the specific behavior shown toward the patient preferring more paternalism from the amount of the same behavior shown toward the patient preferring less

paternalism. Higher values indicate that the physician showed increased nonverbal adaptability.

Correlational analyses showed that the so computed seven nonverbal behavioral adaptability scores are intercorrelated, except for the smiling adaptability scores.¹ We therefore created a composite measure of overall physician nonverbal behavioral adaptability based on the six interrelated adaptability scores (visual dominance, loudness of voice, physician speaking time, gazing at the notes or computer, not gazing at the patient, and not nodding; Cronbach's $\alpha = .66$, $M = -0.01$, $SD = 0.15$).

Consultation outcomes

We used three measures of consultation outcomes selected from the scales in Blanch, Hall, Roter, and Frankel (2009) and Cousin and Schmid Mast (2013). *Patient satisfaction* was evaluated with the three following items: "I am satisfied with the way my physician treated me," "I did not like some aspects about my physician's behavior" (reverse scored), and "I was completely satisfied with my physician's attitude and general behaviour," on a 5-point Likert scale (1 = *completely disagree*, 5 = *completely agree*, Cronbach's $\alpha = .78$). *Patient trust in the physician* was assessed with two items: "I totally trust my physician" and "I have the feeling that my physician is reliable," on the same 5-point Likert scales (Cronbach's $\alpha = .87$). Patients were also asked to evaluate their *physician's competence* with six items. Three items were related to the professional competence of the physician: "I think my physician is competent in his/her profession," "On a few points, I sometimes thought that my physician did not have the necessary knowledge" (reversed item), and "My physician seems to know his/her job perfectly well." The other three items were related to the physician's interpersonal competence: "Sometimes, I thought my physician did not behave in an adequate way," "My physician is a good communicator," and "My physician knows how to present things and behave adequately." The same 5-point Likert scale was used (Cronbach's $\alpha = .72$). Because these three measures of consultation outcomes are significantly correlated (Cronbach's $\alpha = .83$), we averaged them to obtain an aggregated measure ($M = 4.60$, $SD = 0.54$), with higher values indicating better consultation outcomes.

Analysis

There are two levels in our data. Patient data are clustered within physician. At level 1 (for the 64 patients), there are the overall consultation outcome variable and two control variables: patient gender and age. At level 2 (for the 32 physicians), there are the measure of physician nonverbal behavioral adaptability and three control variables: physician gender, experience, and difference in preference for physician paternalism among the two patients. The latter control variable was introduced because the difference in this preference among the two patients varies among physicians. For some physicians the difference in preference among the two patients is most likely very small, and for some physicians, one patient might prefer a very paternalistic physician

¹A table of correlations is available from the corresponding author.

interaction style while the other might prefer a very nonpaternalistic interaction style. Recall that to calculate the physician nonverbal behavioral adaptability we simply identified which patient wanted more physician paternalism than the other without taking into account the extent of this difference. This is why we controlled for the extent of this difference in the analysis.

Due to the clustered nature of our data, we used multilevel analyses to test whether patients report better consultation outcomes with physicians who adapt their nonverbal behavior according to their patients' preferences about physician paternalism. A log-likelihood comparison between the analyses with and without a multilevel approach showed that the multilevel model was a better fit with our data than a model without clustering ($p < .01$).

Results

In our multilevel analysis displayed in Table 2, we entered consultation outcomes as our dependent variable. This variable is a composite of patient satisfaction, trust in the physician, and the evaluation of the physician's competence. Six control variables were integrated in the model, and results show that patient gender and physician gender are the only control variables that are significantly related to consultation outcomes. Female physicians had patients reporting better overall consultation outcomes and female patients reported better consultation outcomes. Physician nonverbal behavioral adaptability was entered in the model as the predictor. Confirming our hypothesis, results show a significant positive relation between physician nonverbal behavioral adaptability and consultation outcomes. In other words, when physicians adapt their nonverbal dominance behavior (i.e., loudness of voice, speaking time, gazing, nodding, and visual dominance) to the level of physician paternalism behavior preferred by each of their patients, they have patients who report better consultation outcomes. Speaking more and more loudly, gazing less at the patient and more at the medical notes, nodding less, and showing more visual dominance when with a patient who prefers the physician to be paternalistic than when with a patient who prefers the physician to be less paternalistic entails that, on average, the patients of this doctor experience their consultations in a more positive way.

Table 2. Multilevel analysis (ML) of physician behavioral adaptability predicting consultation outcomes.

	Consultation outcomes	
	<i>B</i> (<i>SE</i>)	95% Confidence interval (<i>CI</i>)
Patient gender	−0.25** (0.08)	[−0.40, −0.10]
Physician gender	−0.31* (0.14)	[−0.58, −0.03]
Patient age	−0.06 (0.10)	[−0.26, 0.13]
Physician age	−0.04 (0.37)	[−0.80, 0.71]
Physician experience	0.13 (0.37)	[−0.61, 0.88]
Difference in patient preferences	0.16 (0.13)	[−0.11, 0.42]
Physician nonverbal behavioral adaptability	0.62** (0.15)	[0.33, 0.92]

Note. For gender variables: 1 = female, 2 = male. * $p < .05$. ** $p < .01$.

Discussion

The goal of this study was to test whether adapting physician nonverbal behavior to patient preferences for physicians' paternalism is related to more positive consultation outcomes for patients. Results confirm our hypothesis and show that the more the physician adapts his or her personal nonverbal dominance behavior according to what the patient prefers, the better are the consultation outcomes (measured as patient satisfaction, patient trust in the physician, and perceived physician competence by the patient). When patients prefer a paternalistic physician interaction style and the physician addresses them in a relatively dominant way by speaking loudly, speaking much, gazing at the computer or the notes and not at the patient, not nodding at the patient, and displaying visual dominance, patients indicate good consultation outcomes. Thus, contrary to a patient-centered approach that would suggest avoiding a dominant physician communication style for all patients, our results show that certain patients profit from such a dominant style. More generally, our results suggest that the regulation of some aspects of the physician's nonverbal dominance behavior according to patient preferences is an important component of how positive patients experience the medical consultation.

We focused on nonverbal behavior indicative of physician dominance because we expected physician dominance behavior to show up in the nonverbal rather than in the verbal channel, given that there is a considerable amount of pressure for physicians to adopt a nonpaternalistic, patient-oriented verbal interaction style (Institute of Medicine, 2001). Nevertheless, physicians also express dominance verbally (e.g., less agreement, less emotional talks, or more questions; Schmid Mast et al., 2011). Whether physician behavioral adaptability on the verbal level is also linked to better consultation outcomes still needs to be investigated. Studying this issue would most likely necessitate holding the medical problem constant, which is not an easy task in studies involving general practitioners in actual consultations with their patients.

We only investigated physician behavior toward two patients. Depending on whether these patients happened to be very different or very similar in their preferences for physician paternalism, the extent to which the physician needs to change his or her nonverbal behavior differs. This is why we included the difference in patient preference for a paternalistic physician interaction style between the two patients as a control variable. Results show that this did not affect our results. To fine-tune the measure of physician behavioral adaptability, future research might want to include a larger number of patients. However, when dealing with real patients, this does not guarantee more variance in patient preferences of physician interaction style. It is possible that there is a self-selection mechanism of patients to a specific physician at work that would reduce variance in patient preferences. In other words, a physician with a certain interaction style might attract patients with a preference for exactly this style, and patients with different preferences might have chosen to consult elsewhere.

Another limitation of our study is that we investigated whether the physician adapted to a female and a male patient (one exception). Given that female patients prefer less paternalism in the physician than male patients (Krupat et al., 2000), the physicians might have adapted their behavior according to the gender of the patient more than according to having correctly picked up on the desired interaction style of the patient. It has to be noted, however, that in our sample, the female and male participants did not differ significantly in how much paternalism they preferred from their physicians. Physicians could therefore not simply use the gender of the participant as a proxy for how much paternalism they wanted; they must have inferred the patients' preferences for paternalism somewhat correctly from cues other than gender.

To show behavioral adaptability, the physician has to correctly assess the patient's preferences. These are typically not expressed explicitly by patients. Rather, the physician has to infer them based on the interaction behavior exhibited by the patient. The ability to correctly infer the characteristics of an interaction partner is usually called interpersonal accuracy (Hall & Bernieri, 2001). Research demonstrates that we are quite accurate at assessing what other people feel or think (Hall & Bernieri, 2001), and research shows that the level of a physician's interpersonal accuracy is related to important consultation outcomes. A literature review (Hall, 2011) showed that the better physicians were at accurately decoding nonverbal cues, the more positive the consultation outcomes were in terms of patient satisfaction and appointment keeping, and in terms of how positively the patients evaluated the physician's clinical skills, warmth, and engagement. Future research needs to address how physician interpersonal accuracy is related to behavioral adaptability and whether behavioral adaptability explains why physician interpersonal accuracy is related to better consultation outcomes.

The strength of this study is that it takes the patient's preferences into account and investigates the correspondence between patient preferences and physician behavior. It introduces a novel approach focusing on the ability of the physician to tailor his or her behavior toward the needs and preferences of different patients; a core aspect of the notion of patient-centered care.

Conclusion

Our study shows the benefits of a physician who is able to flexibly adapt his or her behavior according to the needs and preferences of his or her patients. Propagating a specific physician communication style that is related to positive consultation outcomes is necessary and useful. However, we should not neglect the fact that patients differ in what they need and want from a doctor in terms of interaction style. To respond to these needs, a physician needs to possess an array of different communication styles. We provide initial evidence showing that a physician's flexible use of communication adapted to patient preferences has positive outcomes for the patient. Physician communication training might want to focus more on teaching different communication styles.

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ARTICLE 3

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When adaptability is better than more caring and sharing: Patient-centeredness as behavioral adaptability to patient preference. Manuscript submitted for publication.

**When Adaptability Is Better than More Caring and Sharing:
Patient-Centeredness as Behavioral Adaptability to Patient Preference**

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Abstract

Objective. We hypothesized and tested whether physician behavioral adaptability (BA) to their patients' preferences concerning their physician's interaction style would lead to better patient outcomes than a high level of physician caring and sharing behavior (CSB) and whether physician interpersonal accuracy was positively related to BA.

Methods. Sixty-one physicians completed an interpersonal accuracy test before being videotaped during 4 consultations with different patients. The 244 patients indicated their preferences for physicians' CSB, their satisfaction with, and trust in the physician. We coded physician CSB and compared it to the patient's preference to obtain a measure of physician BA.

Results. BA is related to more positive the outcomes for female physicians, but not for male physicians. CSB was unrelated to patient outcomes. Additionally, the more interpersonally accurate female physicians were, the more they showed BA. For male physicians, better interpersonal accuracy was linked to *less* nonverbal BA.

Conclusion. Female physicians who are more interpersonally sensitive show more BA and their nonverbal adaptation is linked to positive patient outcomes whereas showing high levels of CSB towards all patients is not.

Practice Implications. Physician communication training might focus more on the adaptation of behavior than on a given set of predefined physician CSB.

Keywords: physician-patient communication; patient-centered care; behavioral adaptability; interpersonal accuracy; patient-reported outcomes

1 Introduction

Patient-centeredness has been defined in opposition to the previously traditional doctor-centered interaction style [1] or disease-centered approach [2]. Despite existing debates about the definition of patient-centeredness [3], its core purpose is – as the name suggests – to place the patient in the center of the interaction. Epstein and Street [4] suggest that “One key defining element of effective patient-centered communication is the clinician’s ability to monitor and consciously adapt communication to meet the patient’s needs” [4]. This conscious adaptation to patients is part of several authors’ definition of patient-centeredness; they all mention the importance of “customization of care” [5], “individualization” [6], “respecting patients’ wants, needs, and preferences” [7], or “care that is concordant with the patient’s values, needs and preferences” [8].

However, most of the research activities in the realm of patient-centered physician communication are dedicated to identifying a series of behavioral cues that are linked to positive patient outcomes for the majority of patients. For example, “maintaining eye contact”, “nodding”, “avoiding interruptions”, “asking about family and social context”, and “providing clear, jargon-free explanations” are part of a list of “patient-centered” cues proposed in a textbook on communication in Oncology [4]. While such an approach might indeed satisfy most patients, even better results might be obtained when the physician tailors his or her communication to each patient and therefore adapts his or her communication style to different patients.

We propose to stick to the core definition of patient-centered care and to focus on how physicians change their behavior as a function of their patients’ preferences for a particular interaction style. Following this logic, we posit that physician behavioral adaptability explains patient outcomes better than a high level of so-called “patient-centered” behavior. We define physician *behavioral adaptability (BA)* as the physician’s individual ability to flexibly change

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his or her behavior from one patient to the other to match each patient's preference [9]. There is preliminary evidence that physician BA is beneficial for patients. In a previous field study, we showed that the more physicians displayed nonverbal dominance (e.g., loudness of voice) when interacting with a patient preferring more dominance in the physician's interaction style, the more positive the patient's outcomes (satisfaction, trust, and physician competence) were [10]. This first evidence for the positive effect of physician BA needs to be replicated and extended. The current research therefore investigates verbal in addition to nonverbal adaptability and adaptability with respect to affiliativeness (i.e., preference for caring behavior) and not just with respect to dominance. Moreover, we claim that, and test whether physician adaptability drives positive patient outcomes more than high levels of so-called "patient-centered" behavior (Hypothesis 1).

To adapt the communication style to each patient's preference, these preferences need to be known or inferred by the physician. This ability is called interpersonal accuracy, defined as the ability to correctly infer others' traits and states [11]. We set out to investigate whether those physicians who are interpersonally accurate are also those who adapt their behavior to their patients' needs. In other words, we want to test whether those physicians who correctly pick up on others' cues by accurately inferring how others feel, for instance, are also those who adapt their behavior. We hypothesized that the more physicians are interpersonally accurate, the more they show BA (Hypothesis 2).

1.1 The Present Study

The goal of the present study is twofold: (1) investigate how physician BA is related to patient outcomes (in terms of satisfaction with the consultation and trust in the physician) above and beyond high levels of so-called "patient-centered" physician behavior and (2) explore how interpersonal accuracy (measured as emotion recognition skill) is related to BA. We thus formulate the following hypothesis: (H1) Higher levels of physician BA with respect

to patient preference is linked to positive patient outcomes beyond simply showing high levels of “patient-centered” behavior; (H2) The more interpersonally accurate physicians are, the more BA they will show towards different patients.

To respect the idea of customization of care, we posit that it is important to assess the degree to which a physician is able to flexibly change his or her behavior from one patient to the next and whether that change is adaptive with respect to the patients’ preferences for a physician interaction style. This thus implies observing the behavior of the physician when interacting with several different patients. In the present study, we therefore recruited 4 patients (2 female and 2 male patients) for each participating physician.

Patient preference for physician interaction style was assessed on the two dimensions on which medical interactions can be mapped, proposed by Krupat, Yeager and Putman [12]: caring and sharing. The caring dimension describes the extent to which a physician shows empathy, warmth, and explores the patient’s perspective. The sharing dimension describes how the physician shares control over the consultation, gives information, and negotiates treatment decisions with the patient. The advantage of such a dimensional perspective is that patients’ and physicians’ attitudes, preferences, and behavior can be described on 2 continua. High caring and high sharing behavior correspond to so-called “patient-centered” behavior and generally are linked to positive patient outcomes. As argued before, in our view, patient-centeredness is achieved when different patients’ preferences for caring and sharing are met by the physician’s caring and sharing behavior (CSB) and not by showing a maximum of CSB towards all patients. Therefore, in the present study, each physician’s score of BA was computed as the correlation between his or her 4 patients’ interaction style preferences and the level of CSB the physician actually showed during each of the 4 corresponding consultations. The more they corresponded, the higher the correlation and thus the higher the physician’s BA.

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If we want to test the link between physician interpersonal accuracy and BA, those 2 measures must be methodologically disentangled. We therefore provided the physician with the information about each patient's preference prior to the medical consultation. In this way, all physicians obtained an equal chance to show adaptability in their behavior regardless of whether or not they would have been able to correctly assess the preferences of their patients (interpersonal accuracy). Interpersonal accuracy was assessed separately prior to the medical interaction.

2 Method

2.1 Procedure and Sample

Between 2013 and 2014, more than 400 general practitioners working in private practices in the French speaking part of Switzerland were contacted by phone or mail. Physicians were not paid for their participation but received personal feedback on their data and were informed that they would be invited to attend a scientific conference during which we would present the results of the study. Once a physician agreed to participate, he or she was asked to take an online emotion recognition test and answer different sociodemographic questions. Then each physician was filmed while in consultation with 4 different patients (2 female and 2 male patients, recruited in the waiting room). Inclusion criteria for the patients were: fluency in French, above the age of 18, presenting no psychiatric disorder. Patients were not remunerated for their participation.

After having filled in an informed consent form, patients reported their preferences regarding their physician's interaction style. This information was provided to the doctors as explained in the Introduction. During the consultation, the physicians were videotaped by a camera placed as unobtrusively as possible. At the end of the consultation, patients were asked to report patient outcomes and socio-demographic information. The physicians' verbal and nonverbal behavior was coded based on the videotaped consultations. The entire

procedure was reviewed and approved by the regional ethic committees for research on human subjects.

2.2 Measures

2.2.1 Physician pre-consultation questionnaire

Physicians were asked to fill in the Diagnostic Analysis of Nonverbal Accuracy (DANVA [13]) via an online link. The DANVA is a well-established interpersonal accuracy measure which correlates with broader as well as medical-specific interpersonal accuracy tests [14, 15]. It consists of 24 faces, each presented for 2 seconds. For each face, the participant chooses which of 4 emotions is expressed (happiness, sadness, anger, and fear). The final score is the total number of emotions correctly recognized.

Physician age and clinical experience might influence their emotion recognition skills as well as their ability to adapt. We thus asked physicians to indicate their gender, age, number of years since graduation from medical school, number of years of medical practice, and number of years in their private practice. Because the latter 4 variables were highly correlated (Cronbach's $\alpha = .97$), we created a composite variable of physician experience.

2.2.2 Patient pre-consultation questionnaire

Before the consultation, patients filled in the Patient-Practitioner Orientation Scale (PPOS [16]) measuring patient preference for their physician's caring and sharing interaction style. This scale consists of 18 assertions for which patients express their level of agreement on a scale between 1 (not agree at all) to 5 (completely agree). A sample item in the caring dimension is: "A treatment can not be successful if it is in direct conflict with the lifestyle or values of the patient"; and in the sharing dimension: "Patients should be treated as partners, equal in power and status". The PPOS score is an indicator of how much the patient desires his or her physician to show CSB (Cronbach's $\alpha = .68$).

2.2.3 Patient post-consultation questionnaire

After the consultation, patients indicated their satisfaction with the consultation and their trust in the physician (positive patient outcomes). Patient satisfaction and trust are very commonly used in studies in healthcare and self-reported satisfaction is related to patient medical improvement [17]. We measured these outcomes with 7 items chosen from a validated scale [18] showing good internal reliability in previous research [19-21]. On a Likert scale from 1 (not at all agree) to 5 (completely agree), patients indicated their level of agreement on 3 items measuring patient satisfaction with the consultation (e.g. “I am totally satisfied with my visit to this doctor”) and 4 items evaluating patient trust in the physician (e.g. “I completely trust my doctor’s decisions about which treatments are best for me”). Reliability of the questionnaire was $\alpha = .71$ and higher values indicate more positive patient outcomes.

Because demographic characteristics influence preferences for interaction style and outcome evaluation, patients were asked to report their sex, age, and educational status (total number of degrees completed after secondary school). Additionally, they indicated the number of years they had known this particular physician, the frequency of medical visits per year with this particular physician (1 = less than once a year; 5 = more than 6 times a year), and the severity of the current medical problem (1 = not at all severe; 5 = extremely severe).

2.2.4 Coding of the videotaped consultation

Verbal behavior. Based on the videotaped consultations, the verbal behavior of the physicians was coded using the Roter Interaction Analysis System (RIAS [22]). The RIAS is a well-established coding system for verbal utterances and has specifically been designed for medical interactions. Each utterance is coded in one of 37 mutually exclusive categories (e.g., empathy, partnership, gives medical information, asks closed medical questions). The frequency of each category is then divided by the total number of utterances.

Using all RIAS categories separately in a statistical model is impracticable, because its large number drastically decreases the model's statistical power. Therefore we simplified our data by computing a CSB composite suggested by the developer of the RIAS and used in previous studies of patient-physician communication [23-25]. This composite is a ratio of the frequencies of the RIAS caring and sharing categories (e.g., empathy, approval, partnership) divided by the frequencies of the categories inversely related to caring and sharing (e.g., criticism, closed-ended medical question). Higher numbers indicate more verbal CSB which corresponds to the so-called "patient-centered" behavior.

Nonverbal behavior. We coded the physicians' nonverbal behavior based on 15 minutes of each consultation. We coded the first 5 minutes, the 5 minutes in the middle, and the last 5 minutes of the consultations (or the entirety of the consultation if it lasted less than 15 minutes) since these 3 sequences respectively corresponded to the exploration of the problem, the diagnosis establishment, and the treatment conveying phases [26]. Longer periods of behavioral observation did not yield more accurate predictions [27].

We coded 7 physician nonverbal behaviors documented in the literature to be related to caring and sharing. We chose 4 behaviors that have been reported as indications of the affiliative dimension of human interactions [28] corresponding to the caring dimension of medical interactions [12]: patient speaking time, physician gazing at the patient, physician nodding, and physician smiling. The other 3 nonverbal behaviors have been shown to be related to the control dimension of human interactions [28] as the opposite of the sharing dimension [28]: physician speaking time, physician gazing at notes or computer, and physician loudness of voice (see Table 1 for description and reliability information).

All 7 physician nonverbal behaviors were correlated with each other (Cronbach's alpha = .68) which is why we computed an aggregate measure of nonverbal CSB. Higher numbers

indicate more physician nonverbal CSB, corresponding to the so-called “patient-centered” behavior.

Verbal and nonverbal behavioral adaptability scores. According to our definition, physician BA is the physician’s ability to modify his or her behavior according to different patients’ preferences. Therefore, for each physician, we computed the correlation between the physician’s CSB shown towards each of his or her 4 patients and the preferences for the physician interaction style of each of these patients. We did this separately for physician verbal and nonverbal CSB. We thus obtained one measure of physician verbal BA and one of physician nonverbal BA.

BA indicates how much the physician’s CSB corresponds to what his or her patients prefer in terms of physician CSB. For example, a high score on nonverbal BA indicates that the physician showed relatively more gazing, smiling, and nodding and used a relatively lower voice, gazed less at the notes and spoke less to the patients who wanted their physician to show more CSB than towards the patients who wanted their physician to show less CSB.

2.3 Analysis

Physician experience as well as patient age, patient education, years since patient’s first consultation with this physician, frequency of patient visit, severity of patient medical problem, and consultation duration were related to our variables of interest (patient outcomes, emotion recognition, verbal and nonverbal BA). We thus entered these 7 variables as covariates in all the computed models. Because the literature shows that there are gender differences in interpersonal accuracy [29] and CSB [30], we computed the analyses over all physicians as well as separately for female and male physicians.

Our first hypothesis – physician BA is linked to patient outcomes on top of showing so-called “patient-centered” behavior – was tested at the patient level with fixed effect multilevel models that allow for the nesting of observations within physician [31]. In these models, the

patient outcome variable is entered in the statistical analyses as a dependent variable with verbal and nonverbal adaptability as independent variables. Verbal and nonverbal CSB were treated as covariates to test whether BA explains patient outcomes above and beyond the high levels of so-called “patient-centered” behavior.

Our second hypothesis – physician interpersonal accuracy is linked to BA – was tested using 2 linear regression models, one for verbal BA and one for nonverbal BA. Because our dependent and independent variables are on the same data level (physician level), the use of multilevel analysis is unnecessary. For the covariates that are on the patient data level, we entered computed means per physician.

A methodological issue in our study is the naturally occurring variability of the patients’ preferences per physician which cannot be controlled in a field study. One physician might have 4 patients that vary highly in their preferences for physician interaction style. Such a physician would have more opportunity to show BA compared to a physician whose 4 patients do not vary in terms of interaction style preferences. We thus controlled for this effect by introducing the standard deviation of patient preferences for each physician as a covariate in our analysis. As this variance in patient preferences per physician did not influence our results we will present them without this covariate.

3 Results

Sixty-one physicians agreed to participate and completed the study. However, only 58 completed the DANVA. All in all, 244 patients participated and completed the study. Descriptive information about the physician and patient sample can be found in Table 2. Independent sample *t*-tests showed no significant differences between female and male physicians (Table 2).

Table 3 shows the results concerning our first hypothesis about physician BA being linked to patient outcomes above and beyond so-called “patient-centered” behavior. For

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female physicians, nonverbal, but not verbal, BA was significantly linked to positive patient outcomes. It is noteworthy that physician CSB was unrelated to patient outcomes. For male physicians, neither verbal nor nonverbal BA was related to positive patient outcomes and physician CSB was also unrelated to patient outcomes. Not separating female and male physicians yielded no significant results.

Regression analyses testing our second hypothesis concerning the link between emotion recognition ability and BA showed different results for female and male physicians (Table 4). For female physicians, there was a significant positive link between emotion recognition and both verbal and nonverbal BA (marginally significant for nonverbal). A different pattern was observed for male physicians with higher emotion recognition skills being significantly related to *less* nonverbal BA. No significant link was observed between male physician emotion recognition skills and verbal BA. Not separating female and male physicians yielded no significant results.

4 Discussion and Conclusion

4.1 Discussion

We hypothesized that BA is linked to more positive patient outcomes above and beyond what using “patient-centered” behavior contributes. Our results confirmed this hypothesis for female physicians with respect to nonverbal adaptability: The more the female physicians showed nonverbal BA, the better the patient outcomes regardless of overall “patient-centered” behavior. There was no link between patient outcomes and “patient-centered” physician behavior. These results underscore that showing a set of so-called “patient-centered” behavioral cues is thus not the best way to achieve positive patient outcomes and that adapting the nonverbal behavior to the preference of each patient yields better patient outcomes, at least for female physicians.

Our results did not show a link between verbal adaptability and patient outcomes. Verbal communication is known to be more controlled than nonverbal communication [32]. This control is cognitively more demanding and there might therefore be less capacity left to adapt. Verbal communication in medical interaction is also more constrained by several aspects of the medical interview such as the necessity to communicate certain information concerning diagnosis and treatment. Consequently, physicians have less flexibility available to adjust their verbal communication in line with patient preference. More research is needed to explore how the cognitive demand of the situation influences behavioral adaptability and its impact on patient outcomes.

One intriguing finding of the present study is the difference between female and male physicians. Nonverbal BA was linked to patient outcomes for female, but not for male physicians. A previous study showed that when the physician adapted his or her sharing behavior according to the patients' preferences for sharing, patients of male *and* female doctors reported better consultation outcomes [10]. It is possible that the effect is generally weaker for male physicians (and absent in some studies as in the current study) because patients expect less adaptability from their male doctors and therefore their satisfaction with and trust in the doctor are not affected by how much BA he shows.

Our second hypothesis posited that interpersonal accuracy was related to physicians showing more BA. Results show that female physicians indeed benefit from more interpersonal sensitivity in that they also show more verbal and nonverbal BA. For male physicians, we observe a different pattern with more interpersonal accuracy being linked to *less* nonverbal BA and no link for verbal BA. It is possible that the operationalization of interpersonal accuracy as emotion recognition is responsible for the difference in the results among female and male physicians. A meta-analysis showed that interpersonal accuracy is more linked to psychosocial functioning of women than of men [33]. Additionally, a study

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using the DANVA showed a positive link between emotion recognition and interactional performance for female, but no link for male, managers [34]. Women have more knowledge of nonverbal cues [14] and it is plausible that male interactional performance is driven by other interpersonal abilities than emotion recognition (e.g., accurately assessing others' status or competence).

4.2 Conclusion

This study confirms our assumption for female physicians' nonverbal behavior: Physician BA to the preferences of the patients – as varied as they might be – is more beneficial for patients than showing high levels of so-called “patient-centered” behavior. Therefore, it is the tailoring of the behavior and not the “one size fits all” approach that is most appreciated by patients. Moreover, female physicians who are skilled in interpersonal accuracy show more BA.

4.3 Practice Implications

Medical faculties might thus consider including interpersonal accuracy training in their curricula as patients of female physicians might particularly benefit from such a skill. Research shows that interpersonal accuracy can be trained [35]. Medical training might also include the teaching of various interaction styles, and not only a certain set of “patient-centered” behavioral cues. Possessing a richer behavioral tool box would indeed be a first step to the tailoring of care and hence to patient-centeredness according to its core definition: adapted to each individual patient.

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Role of Funding and Conflict of Interest

The Swiss National Science Foundation only provided financial support for the conduct of the research: coding expenses, salary of the first author, and research assistants. All authors declare no conflicts of interest.

Ethical Statements

The present study has been approved by the regional ethic committees (Canton of Vaud and Geneva, Switzerland). Signed informed consent was obtained from all participants (physicians and patients). All physicians and patients' identifiers have been removed so they are not identifiable and cannot be identified through the manuscript.

5 References

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Table 1

Codes of Nonverbal Behavior with Reliability Indices, Means and Standard Deviations

Patient speaking time ^a

Spearman $r = .97$, $M = 43.10$, $SD = 15.37$

Duration (in sec) of physician speaking, expressed in percentage of the total medical consultation duration

Physician gazing at the patient ^b

Spearman $r = .83$, $M = 53.68$, $SD = 19.37$

Duration (in sec) of gaze focusing on the patient's head expressed in percentage of the total medical consultation duration. The patient cannot be seen on the video, therefore the position of the patient's head was estimated by using the patient's voice and the physician's nonverbal cues (e.g., gaze when welcoming the patient).

Physician nodding ^b

Spearman $r = .91$, $M = 2.78$, $SD = 2.00$

Duration (in sec) of up/downward motion of the head on a vertical plane expressed in percentage of the total medical consultation duration

Physician smiling ^c

Cronbach's Alpha = .67, $M = 2.30$, $SD = 0.20$

Upward extension of the lips displaying warmth and/or agreeableness, coded for each minute of the interaction on a five-point Likert scale (1 = never smiled to 5 = smiled a lot) and then averaged across all minutes

Physician speaking time ^a

Spearman $r = .83$, $M = 45.70$, $SD = 12.53$

Duration (in sec) of physician speaking, expressed in percentage of the total medical consultation duration

Physician gazing at the notes or computer ^b

Spearman $r = .86$, $M = 44.69$, $SD = 19.71$

Duration (in sec) of gaze focusing on a part of the physician's desk or computer expressed in percentage of the total medical consultation duration

Physician loudness of voice ^c

Cronbach's Alpha = .80, $M = 3.00$, $SD = 0.18$

Amplitude of the voice, coded for each minute of the interaction on a five-point Likert scale (1 = used a soft voice to 5 = used a very loud voice; normal/natural loudness of voice is rated as 3) and then averaged across all minutes

Note. In total, 7 coders blind to the hypotheses were involved in the assessment of the nonverbal behavior:

^a Three coders rated approximately one third of the data set; Interrater reliability was assessed on a subset of 9 consultations rated by all 3 coders.

^b One coder rated the whole dataset; Interrater reliability was assessed on a subset of 10 consultations rated by another coder.

^c Two coders rated the whole data set and their coding was averaged.

Table 2

Descriptive Information Concerning the Study Sample

	Overall		Female		Male		<i>t</i> -test
	physicians		physicians		physicians		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Physician variables	<i>N</i> = 61		<i>N</i> = 27		<i>N</i> = 34		<i>df</i> = 59
Experience	28.71	8.31	28.14	8.86	29.17	7.96	0.48
Emotion recognition	18.08	2.58	18.08	2.70	18.06	2.53	0.02
Verbal BA	0.18	0.85	0.33	0.83	0.05	0.86	0.81
Nonverbal BA	0.29	0.84	0.19	0.89	0.37	0.81	1.28
Patient variables	<i>N</i> = 244		<i>N</i> = 108		<i>N</i> = 136		<i>df</i> = 242
Age	57.48	17.98	55.74	18.53	58.86	17.47	1.35
Education	2.27	1.02	2.19	0.93	2.33	1.08	0.98
Years since first consultation	9.64	10.38	9.68	12.34	9.60	8.55	0.06
Frequency of patient visit	3.01	1.42	3.05	1.44	2.99	1.40	0.33
Severity of medical problem	1.79	0.86	1.83	0.93	1.76	0.81	0.64
Consultation duration (min)	22.94	10.24	23.63	10.30	22.38	10.20	0.95
Preferences for physician CSB	3.33	0.48	3.36	0.49	3.32	0.47	0.70
Patient outcomes	4.61	0.45	4.63	0.41	4.58	0.48	0.86
Verbal CSB showed by the physician	1.30	1.68	1.48	2.19	1.17	1.11	1.44
Nonverbal CSB showed by the physician	1.22	7.57	1.61	7.29	0.91	7.80	0.72

Note. *N* for physician emotion recognition is 58 (26 F, 32 H), *df* for physician emotion recognition is 56. BA = behavioral adaptability; CSB = caring-sharing behavior.

Table 3

Fixed Effect Multilevel Model of Physician Behavioral Adaptability Predicting Patient Outcomes

Variables	All physicians		Female physicians		Male physicians	
	B	SE	B	SE	B	SE
Physician verbal BA	0.06	0.05	0.003	0.04	0.08	0.07
Physician nonverbal BA	0.01	0.04	0.08*	0.04	0.03	0.08
Physician verbal CSB	-0.01	0.02	-0.004	0.02	-0.01	0.05
Physician nonverbal CSB	0.01	0.01	0.01	0.01	0.01	0.01
Physician experience	-0.01	0.005	-0.01*	0.005	-0.01	0.01
Patient age	0.001	0.002	0.001	0.003	0.001	0.003
Patient education	-0.04	0.03	-0.003	0.05	-0.06	0.05
Years since first consultation	0.004	0.004	0.001	0.01	0.01	0.01
Frequency of patient visit	0.05*	0.02	0.06	0.04	0.03	0.03
Severity of medical problem	-0.03	0.04	-0.08	0.07	0.02	0.05
Consultation duration	0.001	0.003	-0.003	0.01	0.004	0.004
Wald χ^2	82.43***		256.48***		90.83***	

Note. N physicians = 61 (27 F, 34 H), N patients = 244 (122 F, 122 H). Variables are unstandardized; results with standardized scores are available from the corresponding author. BA = behavioral adaptability; CSB = caring-sharing behavior.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4

Linear Regression Model of Physician Emotion Recognition Predicting Physician Behavioral Adaptability

Variables	Verbal BA						Nonverbal BA					
	All		Female		Male		All		Female		Male	
	physicians		physicians		physicians		physicians		physicians		physicians	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Physician emotion recognition	0.02	0.05	0.18*	0.07	-0.06	0.07	-0.05	0.05	0.15 [†]	0.07	-0.16*	0.06
Physician experience	-0.03	0.02	-0.02	0.02	-0.09*	0.03	0.02	0.02	0.01	0.02	0.02	0.03
Patient age ^a	-0.01	0.01	-0.004	0.01	-0.002	0.02	-0.02*	0.01	-0.01	0.01	-0.03 [†]	0.14
Patient education ^a	-0.19	0.25	-0.38	0.34	-0.05	0.32	-0.13	0.25	-0.68 [†]	0.37	0.12	0.28
Years since first consultation ^a	0.002	0.02	-0.02	0.02	0.08 [†]	0.04	-0.02	0.02	-0.03	0.02	0.003	0.04
Frequency of patient visit ^a	0.19	0.17	0.35	0.23	-0.01	0.21	0.04	0.16	0.01	0.25	-0.01	0.19
Severity of medical problem ^a	-0.26	0.30	-0.30	0.34	-0.38	0.46	0.27	0.29	0.44	0.37	-0.03	0.41
Consultation duration ^a	-0.02	0.02	0.04	0.03	-0.04 [†]	0.02	0.01	0.02	0.05	0.03	-0.003	0.02
R ²	.15		.51		.38		.18		.52		.43	
F	1.09		2.24 [†]		1.74		1.37		2.27 [†]		2.15 [†]	

Note. N physicians = 58 (26 F, 32 H), N patients = 232 (116 F, 116 H). BA = behavioral adaptability.

^a Mean per physician

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

BOOK CHAPTER

Carrard, V., & Schmid Mast, M. (2015a). Gender in patient-physician interactions. In K. Faniko, F. Lorenzi-Cioldi, O. Sarasin, & E. Mayor (Eds.), *Gender and social hierarchies: Perspectives from social psychology* (pp. 58-71). London, UK: Routledge.

GENDER IN PATIENT-PHYSICIAN INTERACTIONS

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Abstract

Female leaders are typically evaluated less favorably than their male counterparts. Since physicians are perceived as being high in status and power just like leaders, we propose to examine to what extent female doctors are affected by the same evaluations as female leaders in general. We present a review of the literature showing how the sex of the physician and the patient, as well as the sex composition of the physician-patient dyad affect the interaction behaviour of physicians and patients during the medical interaction and the interaction outcomes. Moreover, there are differences in how female and male doctors are perceived and evaluated by their patients and both of these aspects affect consultation outcomes. We examine how gender stereotypes can explain those differences of perception and evaluation of male and female physicians.

Introduction

Physicians have high status and high power in many respects. For one thing, physicians are considered as having high status and prestige because the job is socially highly valued and physicians are typically well paid. They thus have an economically superior standing compared to the majority of their patients. The medical knowledge the patients seek when consulting a physician also adds to the physician's high power or status. And, the medical visit implies most of the time that the patient is ill and/or in pain and in a vulnerable, thus subordinate position. Moreover, being a physician is still associated with being male (Lenton, Blair, & Hastie, 2001) and being humane or caring was more associated with being a female than a male physician (Fennema, Meyer, & Owen, 1990). This highlights that power and gender and their interplay are important to consider when investigating how physicians and patients interact. This is the goal of the present chapter.

Women are underrepresented in high status positions and this includes women physicians. The non-profit research group Catalyst Research (Catalyst Research, 2013a) reports that in business in the US, women represent only 4.2% of the CEOs, 8.1% of the top earners, 16.6% of the board seats, and 14.3% of the executive officers. Yet, what is seldom known is that the picture is even worst in healthcare and social assistance where women represent less than 0.1% of the CEOs, 13.7% of the board directors, and 15.8% of the executive officers (Catalyst Research, 2013b). Women represent 32% of the physicians worldwide (between 2001 and 2004; World Health Organization, 2013). More and more women enter medical school (Jolliff, Leadley, Coakley, & Sloane, 2012), but they are less likely than men doctors to be found in a leading position (Catalyst Research, 2013b).

As is the case for women in high status jobs in general, female physicians also face similar challenges. Female leaders are typically evaluated less favourably than their male counterparts and this evaluation is particularly negative when women leaders adopt a masculine leadership style (Eagly & Karau, 2002). In the present chapter, we will examine to what extent female physicians are affected by the same evaluations as female leaders in general. We will also discuss how female and male physicians differ in their interaction style toward their patients, how patients behave differently towards their female and male physicians and how the sex composition of the physician-patient dyad affects consultation

outcomes. Moreover, we will analyse how gender stereotypes can affect the medical interaction and its outcomes.

The Patient-Physician Interaction

Since physicians are the depositary of the medical knowledge the patients are seeking, patients and physicians usually have an asymmetric relationship where physicians have control over the interaction, they set the agenda, they have the medical knowledge and competence, and they can provide access to treatment options. Physicians differ in the extent to which they share this power with their patients and patients themselves differ in how empowered they are. Roter and Hall (2006) propose a classification scheme describing four prototypical medical interaction styles according to the repartition of power between the patient and the physician.

Table 1

Medical interaction styles according to the distribution of control (Debra L Roter & Hall, 2006, p.26)

Patient Control	Physician Control	
	Low	High
Low	Default	Paternalism
High	Consumerism	Mutuality

- Paternalism is an interaction style in which the physician takes control over the situation. The patient is passive thus not involved in the setting of the agenda and the decision-making process and receives little information during the interaction.
- Consumerism is a setting in which patient takes control over the agenda and the medical interaction. The physician is still the one providing information, but all the decisions are taken by the patient.
- Default is an interaction style characterized by both patient and physician being low in power. None of them takes control over the agenda or the decision. The goals and role of each interaction partner remains vague.

- Mutuality is a style defined by sharing of power between the patient and the physician, characterized by egalitarianism and partnership. Patient and physician exchange information. They will build together an agenda, and negotiate the issue of the situation in order to have a shared decision-making process.

The traditional and still most common medical interaction style is the paternalistic one (Roter & Hall, 2006), although the physician-patient interaction has moved to a more egalitarian relationship in the past decades. Nowadays, the recommended medical interaction style is patient-centeredness (Institute of Medicine, 2001) described as care that “respects the individuality, values, ethnicity, social endowments, and information needs of each patient. The primary design idea is to put each patient in control of his or her own care.” (Berwick, 2002, p.84-85).

Patient-centeredness has shown to be beneficial for the patients as well as for the physicians. Patient-centered physician have patients who are more satisfied (Bensing et al., 2001), who trust the physician more (Aruguete & Roberts, 2000), adhere better to the physician’s treatment recommendations (Robinson, 2006), and are less likely to sue their physicians for malpractice (Ambady, LaPlante, et al., 2002).

Sex in the Patient-Physician Interaction

In the following, we summarize findings from the literature on how female doctors interact with their patients as compared to male doctors. We also present research exploring how physicians treat male and female patients and how the sex composition of the physician-patient dyad affects both physicians and patients. All along, we also report findings on how sex influences patients’ satisfaction. We focus our review on empirical studies conducted in the fields of internal medicine and general practice. These are the fields in which most of these studies are conducted and the focus on a broader field enables to draw more generalizable conclusions concerning patient-physician interactions.

Physician Sex

Physician sex affects how the physician behaves and interacts with his or her patients and patients react differently to the sex of the physician.

Physician sex and physician behaviour. A meta-analysis by Roter, Hall, and Aoki (2002) showed that although female and male physicians show some similarities in their interactions with patients like the quality of the medical information provided, the amount of negative talk, or how much social conversation such as greetings they exchange with their patients, physicians' behaviour shows considerable differences depending on physician sex. Female physicians have longer visit (on average 2 min longer) and ask more closed questions. They explore more the implication of the illness, diagnosis, and treatment for the daily life context of their patients, and ask more psychosocial questions (i.e. questions related to illness impact on patients' psychological and emotional state). Female doctors also display warmer behaviours toward their patient with more positive talk such as agreements, encouragements, and reassurance, as well as more positive nonverbal communication like smiling, nodding, or friendly tone of voice. As compared to male physicians, female physicians build partnership with their patients more actively during the consultations and interrupt their patients less than do male physicians (Rhoades, McFarland, Finch, & Johnson, 2001).

All in all, those results show that female physician behaviour corresponds more to the pattern of patient-centeredness (Debra L. Roter & Hall, 2004; Debra L Roter et al., 2002) characterized by more caring and more sharing. Moreover, the female physicians' behaviour reflects typical female behaviour observed in non-clinical populations: More emotion expression (both verbally and nonverbally), more self-disclosure, and more egalitarianism in social relations (Brody & Hall, 2008; Dindia & Allen, 1992; Fischer, 2000).

Physician sex and patient behaviour. In non-clinical settings, it has been shown that people treat men and women differently in conversations. People gaze more and smile more at women, approach women more closely, and self-disclose more to women (Dindia & Allen, 1992; Hinsz & Tomhave, 1991). In the medical setting, patients behave differently when facing a female physician as compared to when facing a male physician (Hall & Roter,

2002). Patients consulting with a female physician express more positive communication such as agreement than when consulting with a male physician. Patients talk more, provide more medical information and more psychosocial information when with a female physician. This can be due to the active partnership building shown by female physicians. Patients of female physicians also show more empowered behaviour such as more interruptions and they behave in a more dominant way. In sum, when facing a female physician, patient behaviour tends to be more positive, participative, and empowered (Hall & Roter, 1998, 2002).

Physician sex and patient satisfaction. As described above, compared to male physicians, female physicians display more patient-centeredness. This physician interaction style has shown to be related to more positive interaction outcomes (Ambady, Koo, Rosenthal, & Winograd, 2002; Ambady, LaPlante, et al., 2002; Aruguete & Roberts, 2000; Bensing et al., 2001). Given that female physicians use the interaction style that is related to better patient outcomes (e.g. satisfaction) we would expect the female physicians to have more satisfied patients. Astonishingly, it is not the case. A meta-analysis by Hall, Blanch-Hartigan, and Roter (2011) reports that the difference in patient satisfaction between female and male physicians is significant, but so small ($r < 0.04$) that we cannot state female physicians are more positively evaluated as compared to male physicians. This paradox can be explained by the fact that gender stereotypes affect how patients perceive and evaluate female and male physicians. We discuss the effects of stereotypes in the physician-patient interaction later in this chapter.

Patient Sex

Patient sex also influences the communication between physicians and patients. Female patients differ from male patients in that they have different medical problems, different bodies, their preferences for the type of physician interaction style are different, and their behaviour in the medical encounter differs as does the behaviour of the physicians in function of the sex of the patient (Kiesler & Auerbach, 2006; Verbrugge, 1989).

Patient sex and patient behaviour. Female patients use more positive statements. They engage in more emotionally concerned talk and express their feelings more than male

patients who talk more about facts when with their physician (Stewart, 1983). Female patients display more disagreement and speak in a less bored and less calm voice (Hall & Roter, 1995). Female patients also ask more questions and show more interest (Hall & Roter, 1998; Wallen, Waitzkin, & Stoeckle, 1979). All in all, patient behaviour depends more on physician sex than on patient sex (Debra L Roter, Lipkin Jr., & Korsgaard, 1991).

Patient sex and physician behaviour. Physician behaviour is influenced by their patient's sex. Physicians ask female patients more than male patients questions about what they think and how they feel (Hall & Roter, 1998; Stewart, 1983; Wallen et al., 1979). Female patients also receive more emotionally concerned statements from their physicians (Hall & Roter, 1995, 1998) and are addressed with more empathy (Hall, Irish, Roter, Ehrlich, & Miller, 1994a; Hooper, Comstock, Goodwin, & Goodwin, 1982). Physicians provide more information to female than to male patients (Hall & Roter, 1998) and speak in a calmer, less dominant way to female patients than to male patients (Hall et al., 1994a). However, it has also been shown that physicians express more disagreements, speak in a more bored voice (Hall & Roter, 1995), and interrupt female patients more than they do male patients (Rhoades et al., 2001). In sum, physicians tend to respond to female patients with more emotional and egalitarian behaviours than toward male patients. At the same time, physicians also express more dominance behaviours toward female patients than toward male patients.

Patient sex and patient satisfaction. Physicians use a more patient-centered interaction style toward female patients than toward male patients. We thus would expect female patient to be more satisfied. However, similar as in the case of the physician, there is no significant influence of patient sex on satisfaction with the medical consultation (Hall & Dornan, 1990; Jenkinson, Coulter, Bruster, Richards, & Chandola, 2002; Mead, Bower, & Hann, 2002).

Sex Dyads

Relatively little research has looked at the sex composition of the dyad and how it affects the interaction behaviour between physician and patient and consultation outcomes.

Male physician with male patient. Koss and Rosenthal's (1997) study of interactional synchrony (coordination of behaviours between two people) showed that male-male dyads were the ones with the least coordination between patient and physician. The male-male dyad is also the one with the lower patients' rating of the physicians' tendency to include them in the decision-making process (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995). Male physician-male patient dyads are characterized by the greatest amount of physicians speaking time as compared to patient speaking time (Hall et al., 1994a), and by the highest level of physician dominance (Debra L Roter et al., 1991). To summarize, it seems that the male physician-male patient dyad is characterized by power differences between the physician and the patient with the male physician showing more dominant behaviour and male patient being more submissive.

Male physician with female patient. The male physician-female patient dyad is the least well documented. The only relevant finding we were able to find is that this dyad has been shown to be the one with the least amount of patient-centeredness from the physician (Law & Britten, 1995).

Female physician with female patient. The female-female dyad is characterized by more mutuality (Hall, Irish, Roter, Ehrlich, & Miller, 1994b), more patient-centeredness (Law & Britten, 1995), and more interactional synchrony (coordination of behaviours between the persons; Koss & Rosenthal, 1997). In this dyad, consultation times are longer (Franks & Bertakis, 2003) and amount of speaking time between the physician and the patient are more equal (Hall et al., 1994a). This is also the dyad in which the physician shows more positive statements, emotional exchange, nodding, and interest cues like back-channelling (Hall et al., 1994a; Irish & Hall, 1995; van den Brink-Muinen, van Dulmen, Messerli-Rohrbach, & Bensing, 2002).

Female physician with male patient. The female physician-male patient dyad is the one where the physician uses the least amount of technical language, smiles the most, but also used the most dominant tone of voice in the beginning of the consultation, the friendliest tone of voice in the end and the most interested and anxious tone of voice all along the

consultation (Hall et al., 1994a). In this dyad, the male patient used the most dominant and bored tone of voice, but also made more partnership statement (Hall et al., 1994a). We can see that the interaction between female physician and male patient is characterized by discordant behaviours. This can reflect uneasiness felt by both partners in a situation where a woman, by handling a high power position in front of a man in a lower power position, challenges the stereotypes associated with sex. We will see more about gender stereotypes and their impact on the patient-physician interaction in our next subchapter.

Sex composition of the dyad and patient satisfaction. There is only scarce research exploring sex composition of the dyad and its effects on medical interaction outcomes. Nevertheless, their findings showed that sex dyads influence patient satisfaction. Female patients trusted female physicians more than male physicians and overall rated more positively the consultation when consulting with a female physician (Deroose, Hays, McCaffrey, & Baker, 2001). In the female-female dyad, a greater patient satisfaction is linked with more occurrences of the female physician typical behaviours: positivity, egalitarianism, and psychosocial orientation (Hall et al., 1994b). When focusing at the link between interruptions and patients' satisfaction, we can interestingly note that for the female-female dyad more interruptions are positively related to patient satisfaction, but they are negatively related for the consultation involving a man (patient or physician; Hall et al., 1994b). It seems thus that sex composition influences the way interruptions are experienced by patients. Sex combination also influences the way expressed physician uncertainty is perceived. A study showed that expression of uncertainty leads to dissatisfaction only when the physician is a woman and the patient a man (Cousin, Schmid Mast, & Jaunin-Stalder, 2013). All in all, the sex dyads that are less likely to lead to patients' satisfaction are the ones with opposed sex. In absolute terms, the lowest satisfaction rate is the male patients' consulting with a younger female physician and female-female dyads are the ones which are more often related to patient satisfaction (Hall et al., 1994b).

Gender Stereotypes

Stereotypes describe how a person belonging to a specific group typically is or behaves (Burgess & Borgida, 1999; Heilman, 2001). Among other things, women are expected to be

communal, indecisive, weak, gentle, and emotional and men are expected to be agentic, decisive, strong, bold, and rational (Burgess & Borgida, 1999). Stereotypes are also prescriptive and define how a person belonging to a specific group should behave (Burgess & Borgida, 1999; Heilman, 2001). Gender prescriptive stereotypes overlap with the descriptive ones. Women should thus show the behaviours that stereotypically characterize them (e.g. communal or gentle) and should not behave in a manly way (e.g. agentic or bold; Heilman, 2001).

The *lack of fit* model (Heilman, 1983, 1995) states that when the expectations about the attributes of a job are in line with the attributes stereotypically associated with the person in this job, the evaluation of this person will be positive. However, when there is a lack of correspondence between the attributes associated with the job and those associated with the job holder, the evaluation of the person will be negative. The expectations linked to being a physician include both, the feminine caring and communal aspect, but it also contains much of the male-typical attributes such as technical and medical competence, and status (Debra L Roter & Hall, 2006). Women are stereotypically seen as low status and this is where the lack of fit for women physicians comes in: Being a physician necessitates conveying power and status but that is not how women are typically seen. This incongruence between gender expectations and job attributes can explain why female physicians do not have patients that are much more satisfied than patients of male physicians. Patient-centeredness showed more by female physicians should lead to much better satisfaction with female physicians, but the lack of fit between what women should be like and what physicians should be like attenuates this expected link.

The lack of fit models comes also into play when looking at the way female and male physicians interact with their patients. When the female physician behaves in a male-typical way (e.g. showing less patient-centered communication), this incongruence is associated with a more negative evaluation and when the female physician behaves in a female-typical way, this is linked to more positive evaluations of her by the patients. To illustrate, people indicated to be more satisfied with a female physician when she behaved according to what is expected from her in terms of gender stereotypes (e.g. more gazing at the patient, more forward lean, softer voice) whereas satisfaction ratings for male physicians depended less on

their gender-congruent behaviour (Schmid Mast, Hall, & Roter, 2008). Also, female patients were particularly satisfied with female physicians who showed a caring, thus gender role congruent interaction style, whereas in male-male interactions, the physician communication style did not affect patient satisfaction (Schmid Mast et al., 2008). The lack of fit model can also explain why female physicians do not get credit for using a more patient-centered interaction style but male physicians do (Hall, Roter, Blanch-Hartigan, Schmid Mast, & Pitegoff, 2014). It seems as if when women doctors are expected to use a more patient-centered interaction style and when they do, they simply confirm what was expected from them. If they do not, this is when they obtain less favorable evaluations. For men, when they show the non-expected patient-centered communication style, they are perceived as going out of their way to accommodate their patients by using an unexpected positive communication and then this gets noticed by patients in a positive way. To the lack of fit between the level of expected patient-centered behaviour and the level of actually shown patient-centered behaviour seems to be the driving factor for how patients evaluate their physicians. The lack of fit draws the attention to scrutinizing the physician's behaviour.

Conclusion and Outlook

Sex of the physician and sex of the patient as well as the sex composition of the physician-patient dyad affects how both physicians and patients behave during the medical interaction and it affects the quality of the interaction and its outcomes. Not only are there differences in how female and male doctors behave and communicate with their patients, there are also differences in how female and male doctors are perceived and evaluated by their patients. Both of these aspects affect consultation outcomes.

Outlook

Many areas remain under-researched. For instance, there is a gap in the literature concerning gender differences according to different fields of medical specialization. This chapter is based on internal medicine and general practice because most of the gender studies in medical communication have been conducted in these fields. Nevertheless, the different medical specializations imply differences concerning the goal of the consultation – for example bad news delivery for oncology, or purely information provision for surgery. It

would thus be interesting to see whether and how male and female physicians are evaluated differently when the consultation goals and the implications differ. Interestingly, gender segregation has labelled certain medical specializations as being more female (like pediatric) or male (like surgery; Boulis, Jacobs, & Veloski, 2001) and medical students tend to choose their specialization accordingly (van Tongeren-Alers et al., 2011). Future researches might want to focus more on the gender specificities of the different medical specializations.

There is more research needed to investigate how the sex composition of the dyad affects the way a consultation unfolds and what the consultation outcomes are. Research so far suggests that the female physician-male patient dyad might be particularly problematic. With the feminization of medicine (Levinson & Lurie, 2004) - meaning an increased percentage of women becoming doctors over the years - this sex constellation will become more frequent in the future and thus deserves more scrutiny in order to know how to counteract potential negative effects.

Also, the role of the gender stereotypes is not completely clear. Some research shows that women doctors profit from adopting a feminine interaction style, others show that female doctors should avoid a masculine interaction style, and others show that women doctors are not rewarded for using a patient-centered interaction style. Future research might want to address which conditions or which aspects of the female physician communication style exactly affect the medical consultation outcomes.

Practical Implementations

How female physicians can counteract potentially negative evaluations or profit more from using the state-of-the-art communication style is not an easy task. Although some studies show that adherence to the more female-typical communication style can be beneficial for female physicians (Schmid Mast et al., 2008), we would not like to suggest that behaving in a more female way is the way to go, especially because empirical evidence also shows that when female physicians do this by, for instance showing more patient-centeredness, they do not necessarily get credit for it (Hall et al., 2014). So one piece of advice for female doctors is to avoid male-typical behaviour, because this has a relatively consistent negative influence

on how they are evaluated (Eagly & Karau, 2002). We also think that the physician stereotype will develop toward including more female-typical aspects and we then would expect less difference in the evaluation of female and male physicians. By bringing the female physician role model to greater prominence, people's stereotypes about physicians might change and include more feminine attributes (e.g. warmth, caring, empathy).

Individual differences in patients are another important factor. Not all patients harbour gender stereotypes to the same extent. For example, the more hostile sexist a male patient was, the less satisfied he indicated he would be after a consultation with a female physician because he perceived the female physician as less patient-centered in her communication style (Klößner Cronauer & Schmid Mast, 2014). This reaction can be explained by a rejection of womanly behaviours (like patient-centeredness) or by a rejection of women in relatively high status positions by hostile sexist men.

So physician training might want to include knowledge about gender stereotypes physicians can encounter in their daily practice and training in interpersonal sensitivity to pick up on whether their patients are particularly affected by gender stereotypes. With more awareness of gender stereotypes, physicians would better understand their patients needs, preferences, and reaction and could react to them accordingly.

Conclusion

The physician-patient relationship is a particularly interesting relationship in which to study gender and power effects because unlike in many other leadership positions, the expectations concerning a physician are not completely masculine; there are many aspects of gender stereotypical female behaviour included in the expectations people harbor towards a physician: empathy, caring, etc. In that sense, it is a relationship that has the potential to result in fewer gender differences than other hierarchical relationships.

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