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THREE ESSAYS ON THE INTERACTION BETWEEN GENDER AND SELF-DISCLOSURE ON THE RECIPIENT'S OUTCOMES AND PERCEPTION OF THE DISCLOSER IN HIERARCHICAL RELATIONSHIPS.

Kadji Kéou Kambiwa

UNIL | Université de Lausanne

FACULTÉ DES HAUTES ÉTUDES COMMERCIALES

DÉPARTEMENT DE COMPORTEMENT ORGANISATIONNEL

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pour l'obtention du grade de
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par

Kéou Kambiwa KADJI

Directrice de thèse
Prof. Marianne Schmid Mast

Jury

Prof. Felicitas Morhart, Présidente
Prof. Franciska Krings, experte interne
Prof. Judith Hall, experte externe

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UNIL | Université de Lausanne
HEC Lausanne
Le Décanat
Bâtiment Internef
CH-1015 Lausanne

I M P R I M A T U R

Sans se prononcer sur les opinions de l'autrice, la Faculté des Hautes Études Commerciales de l'Université de Lausanne autorise l'impression de la thèse de Madame Kéou Kambiwa Kadji, titulaire d'un Bachelor in Finance with Business Management de Solent University Southampton et d'un Master in International Health Management d'Imperial College London, en vue de l'obtention du grade de docteure ès Sciences économiques, mention management.

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Le doyen

Jean-Philippe Bonardi

Members of the thesis committee

Prof. Marianne Schmid Mast

University of Lausanne

Thesis supervisor

Prof. Franciska Krings,

University of Lausanne

Internal member of the thesis committee

Prof. Judith Hall

Northeastern University

External member of the thesis committee

University of Lausanne
Faculty of Business and Economics

Ph.D. in Economics
Subject area "Management"

I hereby certify that I have examined the doctoral thesis of

Keou Kambiwa KADJI

and have found it to meet the requirements for a doctoral thesis.
All revisions that I or committee members
made during the doctoral colloquium
have been addressed to my entire satisfaction.

Signature: _____ Date: 20.12.2020

Prof. Marianne SCHMID MAST
Thesis supervisor

University of Lausanne
Faculty of Business and Economics

Ph.D. in Economics
Subject area "Management"

I hereby certify that I have examined the doctoral thesis of

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Signature: _____ Date: 21.12.2020

Prof. Franciska KRINGS
Internal member of the doctoral committee

University of Lausanne
Faculty of Business and Economics

Ph.D. in Economics
Subject area “Management”

I hereby certify that I have examined the doctoral thesis of

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Signature:  Date: 21.12.2020

Prof. Judith A. HALL
External member of the doctoral committee

THREE ESSAYS ON THE INTERACTION BETWEEN GENDER AND SELF-DISCLOSURE ON THE RECIPIENT'S OUTCOMES AND PERCEPTION OF THE DISCLOSER IN HIERARCHICAL RELATIONSHIPS.

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by

[Keou Kambiwa Kadji]

In Fulfillment
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PREFACE

This thesis is submitted in fulfillment of the requirements for the PhD (Doctor of Philosophy) in Management at HEC Lausanne according to the rules of getting a PhD degree the University of Lausanne. This thesis is in the format of "***Monograph based on articles***".

This thesis contains three papers that are written by the defendant during the PhD candidate research period. Among them, paper #1 is titled as "Physician self-disclosure during medical encounters: A gender study". Paper #2 is titled as "The effect of physician self-disclosure on patient self-disclosure and patient perceptions of the physician". It is currently in process of review and submission to PEC journal. Paper #3 is titled as "Subordinate Perception of Supervisor Self-disclosure: A Gender Study" It will be submitted to the journal of "Management and Organization Review" (an ISI impact factor journal) during or after the defense of this thesis. The defendant is the leading author of all three papers included in this thesis and the coauthors are either the thesis supervisor (Marianne Schmid Mast) or colleagues (Valerie Carrard). All co-authors have been notified and have agreed to include these papers in the defendant's doctoral thesis.

These three papers have a central and common theme meaning some theoretical arguments and especially concept definitions may seem repetitive. However, each paper has a different focus, design and sample characteristics. An effort has been made to minimize redundancies and make the thesis logical and coherent to ensure a common thread

PART 1: INTRODUCTION

Three Essays on The Effects of The Interaction Between Gender and Self-Disclosure on The Recipient's Outcomes and Perception of The Discloser in Hierarchical Relationships.

Presentation of the Research

It is difficult to imagine an organizational environment that does not require one person to interact with another (Singh, 2014) because everyone is constantly communicating regardless of their social group, age, gender, religion, or ethnic background (Widhiastuti, 2013). Social groups, however, rapidly self-organize into hierarchies, where members vary in their level of power, influence, skill, or dominance (Koski, Xie, & Olson, 2015). Hierarchy refers to the ranking of members in social groups based on the power, influence, or dominance they exhibit, whereby some members are superior or subordinates to others (Fiske, 2010; Magee & Galinsky, 2008; Mazur, 1985; Zitek & Tiedens, 2012). These hierarchies are universal and exist in almost all cultures and organizations (Magee & Galinsky, 2008; Sidanius & Pratto, 2001). However, it is important to make the distinction between formal and informal hierarchy.

Formal hierarchy can be defined as an official system of unequal person-independent roles and positions, which are linked via lines of top-down command-and-control (Huber, 1976; Laumann, Siegel, & Hodge, 1970). In a formal hierarchy, the official roles and positions of all members of the system are clearly defined and demarcated from each other (Zeitlin, 1974, p. 1090) such that a formal leader (e.g., a supervisor) is equipped with authority to direct group members' behavior, assign roles to individual members, and monitor their efforts and performance (Lorinkova, Pearsall, & Sims, 2013; Sagie, 1996; Somech, 2006). Informal hierarchy frequently arise when two people interact such that one person acts in a more dominant fashion and the other acts in a more submissive manner (Markey, Funder, & Ozer,

2003; Sadler & Woody, 2003; Tiedens & Fragale, 2003). It is characterized by the absence of formal power and authority structures and it enables more influential members to change others' behavior. (Anderson & Brown, 2010; Mowday, 1978).

In my thesis, informal hierarchical relationship will be represented by the physician-patient relationship. In fact, according to research, the physician-patient interaction is inherently hierarchic as the physician has generally more medical knowledge than the patient (Schmid Mast, 2004). The physician also has more *experienced power* over the patient. *Experienced power* describes the extent to which a person feels powerful in a given situation with a given interaction partner for a given task or type of interaction (Schmid Mast, 2010). In this case, the physician (who has high power during the interaction) has the competence relevant for the medical encounter contrary to the patient (who has low power during the interaction because of lack of knowledge or information).

Formal hierarchical relationship will be represented by the supervisor-subordinate relationship within an organization. In fact, in many organizations, not only monitoring and control, but also the flow of information is hierarchically structured. Employees are often discouraged from communicating with any higher-level managers other than their immediate superior (Friebel & Raith, 2004). Superior and subordinate interaction and communication to achieve both personal and organizational goals have been objects of investigation by social scientists for a long time (Jablin, 1979). In the case of formal hierarchical relationships, superiors exert *perceived power* which is described as the impression an observer gains of a target's power. *Perceived power* can stem from the knowledge of each other's position power (e.g., one is the superior of the other) (Schmid Mast, 2010). In both types of hierarchical relationships, the quality of the relationship is crucial.

For informal hierarchy, which is typical between a physician and a patient, it is important for patients and physicians to develop a close relationship because accurate diagnoses and effective treatment depend on the quality of this relationship (Kaba & Sooriakumaran, 2007; Stewart, Nápoles-Springer, & Pérez-Stable, 1999). The main goals of current physician-patient communication are thus creating a good interpersonal relationship, facilitating the exchange of information, and including patients in decision making (Ha & Longnecker, 2010). Good doctor-patient communication has the potential to help regulate patients' emotions, to motivate patients to adopt healthy habits (Frank, Breyan, & Elon, 2000), facilitate comprehension of medical information, and allow for better identification of patients' needs, perceptions, and expectations (Bredart, Bouleuc, & Dolbeault, 2005; Platt & Keating, 2007). One of the tools physicians can use to create trustworthy relationships as part of their communication strategy is self-disclosure, which is reported to establish rapport and understanding between physicians and patients (Arroll & Allen, 2015).

For formal hierarchy, which is typical between supervisors and subordinates, the quality of the relationship is also particularly important because it is likely to affect subordinates' future growth or tenure prospects within the organization as well as how they feel about their job (Hassan & Chandaran, 2005). Previous research showed that low quality supervisor-subordinate relationships decrease subordinate attachment to the firm and increase their willingness to leave the organization. On the contrary, high quality supervisor-subordinate relationships increase subordinates' feelings of attachment to the organization (Hamdi & Rajablu, 2012).

Gender and hierarchy

Nowadays, there are a greater number of women in positions of power and this has helped study female leaders along male leaders (Eagly & Carli, 2001). When it comes to

gender in organizations, Witherspoon (1997) showed key differences between male and female supervisors. Men are more argumentative, give their opinions and don't share any personal information, whilst females believe in nurturing roles, they interrupt for explanation, and more supportive towards other speakers. Additionally, according to Baird and Bradley (1979), female supervisors communicate differently than male supervisors. They provide information to their subordinates; they are more open to ideas and form interpersonal relationships with employees. Despite that, a study by Vial et al., (2018), showed that their male participants had a tendency to rate male supervisors more favorably than female supervisors, whereas female participants tended to rate female supervisors more favorably than male supervisors. Thus, across both studies, the authors found a pattern consistent with gender in-group favoritism, meaning in hierarchical relationships, gender of both the supervisor and subordinate are important to investigate.

In the medical field, Bertakis (2009) and Hall et al., (2011), stated that gender is one of the many factors that impact the patient-physician interaction and suggested that patient satisfaction is influenced by physician gender, as well as physicians' behavior (in this thesis is the act of self-disclosing). Female physicians might be devalued compared to male physicians due to sexism resulting in less value attributed to female physician expertise simply because they are female (all et al., 2011). Another reason might be stereotypes placed on "physician" and "woman". In fact, there are gender stereotypes linked to the medical profession and that there should be increased awareness of such stereotypes. If we consider the *lack of fit* model (Heilman, 1983, 1995), which 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, one might hypothesize that the more a female physician exhibits communication behaviors that her patients expects, the more satisfied her

patients would be, because women are expected to be more interpersonally oriented and to talk more about themselves (Dindia & Allen, 1992).

Communication, self-disclosure and hierarchy

It is crucial to have good quality supervisor-subordinates relationships in the workplace as they are associated with trust, respect, a willingness to share information (Blatt & Camden, 2007; Labianca, Brass, & Gray, 1998; Ragins & Button, 2007; Simons & Peterson, 2000), as well as subordinates' performance (Jehn & Shah, 1997) and this can be fostered through good communication because how supervisors communicate with subordinates affects the quality of their relationship (Bakar & Mustafa, 2007). It is also important for patients and physicians to develop a close relationship because accurate diagnosis and effective treatment depend on the quality of this relationship (Kaba & Sooriakumaran, 2007; Stewart et al., 1999). One of the tools physicians can use to create trustworthy relationships as part of the patient-centered approach to medical care is self-disclosure, which is reported to establish empathy and understanding between physicians and patients (Allen & Arroll, 2015). Similarly, in an effort to improve supervisor communication, one communication aspect that has shown positive outcomes (e.g., liking, closeness) for the receiver of the communication is self-disclosure (Beach et al., 2004; Sprecher, Treger, & Wondra, 2013, Nazione et al., 2019).

Self-disclosure, or the disclosure of personal information, is a form of verbal communication which allows individuals to get to know one another better (Ensari & Miller, 2002; Pettigrew & Tropp, 2006) and is commonly used to form quality relationships (Brickson & Brewer, 2001; Mannix & Neale, 2005). Several studies of self-disclosure (Jourard, 1959; Jourard & Lasakow, 1958; Worthy, Gary, & Kahn, 1969) show that people feel closer to those who disclose personal information: e.g., values and beliefs, leisure activities, and personal concerns and fears, as well as likes and dislikes (Cozby, 1972; Ensari & Miller, 2002).

Even though there are several studies that look at interpersonal communication in the literature, there is a noticeable and important gap: research linking these two significant areas, gender and self-disclosure, along with the subsequent implications for recipients' outcomes and perceptions of the discloser in different types of hierarchical relationships namely formal and informal hierarchical relationships. It is important to investigate because research shows stereotypical beliefs about the way men and women behave and are supposed to behave exist (Glick & Fiske, 1999). In fact, according to Glisk and Fiske (1999)'s *ambivalent sexism theory*, male predominance in economic, political, and social institutions supports hostile sexism, which characterizes women as inferior and incompetent and this has been demonstrated to be important when it comes to expectations and perceptions of behavior in hierarchical relationships (Johansson & Wennblom, 2017).

Summary of the Research

Paper 1: Physician Self-Disclosure During Medical Encounters: A Gender Study

In the first paper, my co-authors and I investigate physician self-disclosure during medical consultations through two different studies. The aim of this research is to investigate which, how, and when physicians use self-disclosure during medical encounters and how physician self-disclosure relates to physician and patient characteristics and to consultation outcomes, based on two studies in general practices in the French speaking part of Switzerland.

In both studies we measured patient satisfaction and trust. We chose to study patient satisfaction because it is an important and commonly used indicator for measuring the quality of health care (Prakash, 2010) and patient trust because according to the literature there seems to be a general consensus that there is a relationship between trust and self-disclosure (Cozby, 1973; Pearce & Sharp, 1973). Despite the fact that many investigators of self-disclosure have

argued that some relationship exists, little empirical research has confirmed this notion and we would like to investigate this relationship in a medical context.

Study 1: Thirty-six physicians (20 men and 16 women) were videotaped during their usual practice with 2 patients each (one man and one woman) and both patients and physicians answered a series of questionnaires. Each videotaped physician-patient consultation was coded for self-disclosure following the same procedure used by Beach et al., (2004). Self-disclosure was coded into 8 different types (reassurance-short/long, counselling, rapport humor, rapport empathy, casual, intimacy, and extended narratives). During this investigation, we also examined consultation segments in which there was more self-disclosure than others. At the end of the consultation, patients were asked to evaluate the consultation (satisfaction, trust, adherence, patient perceived physician professional competence) and to report socio-demographic information such as age and gender.

Study 2: Sixty physicians (34 men and 27 women) were videotaped during their usual practice with 4 patients each (two men and two women) and both patients and physicians answered a series of questionnaires. Self-disclosure was also coded into 8 different types (reassurance-short/long, counselling, rapport humour, rapport empathy, casual, intimacy, and extended narratives) At the end of the consultation, patients were asked to evaluate the consultation (satisfaction, trust, and enablement) and to report socio-demographic information such as age and gender.

Our results suggest that self-disclosure is a communication strategy used during medical encounters. Gender differences do exist when it comes to self-disclosure in patient-physician interactions. On the one hand, male physicians who cared about their patients and were interpersonally oriented used more self-disclosure. Male physicians also showed more self-disclosure than female physicians when faced with potentially vulnerable patients or

patients they knew well. On the other hand, female physicians self-disclosed more than their male colleagues, but we had less understanding as to which female physicians do so and to which patients.

Paper 2: The Effect of Physician Self-disclosure on Patient Self-disclosure and Patient Perceptions of the Physician

In the second paper, my co-author and I empirically investigate the role of physician gender and physician self-disclosure on consultation outcomes, on how patients perceive the physician and how they react to the physician (i.e., disclosure reciprocity). We introduce two different theories to guide this paper. The first is a classic congruity model of gender discrimination, which is the "lack of fit" model (Heilman, 1983). We drew on this model because it has been tailored to understand gender discrimination (Heilman & Caleo, 2018) and it considers gender stereotypes, which portray men as agentic and women as communal (Haines, Deaux, & Lofaro, 2016). According to this model, outcomes that are discriminatory against women come from an incongruity between the attributes that women are thought to possess, and the attributes seen as necessary for success in male-typed positions and fields. Medicine has been considered a male dominated field for a long time (Standley et al, 1974; Ward, 2008) thus my expectation for this study was for female physicians to be perceived more negatively, and have more negative outcomes than male physicians when they self-disclose because self-disclosure is a communication tool generally attributed to women whilst the profession of physician is male dominant.

Another theory we looked at in this paper is disclosure reciprocity (Valerian J. Derlega & Berg, 1987), which refers to the process by which one person's self-disclosure elicits another person's self-disclosure (Jourard, 1971). It is an important aspect of self-disclosing behavior

and has been thoroughly investigated in psychology, yet overlooked when it comes to physician-patient relationships

For this experimental study, 207 participants (113 men and 94 women) were recruited through a university subject pool and were invited to answer two questionnaires. They were asked to put themselves in the shoes of real patients (analogue patient design). One questionnaire was given to them before looking at the physician-patient dialogue and one questionnaire was given to them after the dialogue. We manipulated the gender of the physician (male or female) and the amount of self-disclosure during the conversation (with self-disclosure and without self-disclosure).

Results reveal that physician gender and physician self-disclosure did not affect patient outcomes and only slightly altered the perception of the physician. However, physician self-disclosure had an effect on the behavioral intentions of the patients (i.e., willingness to self-disclose) and this was moderated by physician gender. Patients were more willing to self-disclose to female than to male physicians who self-disclosed.

Paper 3: Subordinate Perception of Supervisor Self-disclosure: A Gender Study

In the third paper, I empirically investigate the relationship between supervisor gender, supervisor self-disclosure and subordinates' perception of their supervisor. In this paper, on top of theories introduced in *paper 2*, I draw on a third theory which is the leader-member exchange theory. Leader–member exchange (LMX) theory is a relationship-based, dyadic theory of leadership. Compared to other behavioral leadership theories, LMX does not focus on what leaders do, but on how leaders influence employees through the quality of the relationships they develop with them (Bauer & Erdogan, 2015).

For this study, I recruited 280 participants (156 men and 121 women) through Mturk. Participants filled in a survey with various measures about their supervisor self-disclosure characteristics (depth, breath, valence, perceived honesty, and appropriateness) and outcomes from their supervisor-subordinate relationship (trust, perceived supervisor warmth & competence, commitment to supervisor). The previously mentioned measures were highly correlated and were thus grouped under one measure called positive perception of supervisor.

Results suggested that there were no gender differences in how subordinates perceived supervisor self-disclosure However, supervisor self-disclosure characteristics did relate differently to subordinate perceptions of the supervisor as a function of supervisor gender. When men supervisors self-disclosed, this had positive effects and when women supervisors self-disclosed, this had negative or no effects with the exception of when the self-disclosure was perceived as honest, in which case it was also positive for female supervisors. My results underscore the relevance of taking gender roles into account in the relationship between supervisors and their subordinates within organizations.

Contribution of the Research

By examining the consequences of self-disclosure in both of these hierarchical relationships, my thesis is expected to make several contributions to the existing self-disclosure literature. First, it contributes by adding to the existing research on two different hierarchical relationships, namely physician-patient relationships and supervisor-subordinate relationships. It also contributes by allowing a better understanding of the role of gender for the discloser, and how it affects the perception of the discloser by the recipient. In fact, this thesis also diverges from recent research that focuses on self-disclosure from the discloser's perspective (e.g., the decision to disclose, the discloser's perception of personal relationships; (Dumas, Phillips, & Rothbard, 2013; Phillips, Rothbard, & Dumas, 2009; Ragins, 2008) and instead

uses survey type studies, a controlled laboratory setting and Mturk, to examine how the individual who receives the disclosure ("the receiver") reacts to the discloser's statements. This also contributes to organizational research because it highlights how the behavior (i.e., self-disclosing) has immediate consequences for the receiver, which ultimately impacts the supervisor-subordinate and patient physician relationship.

These findings have important practical implications as they underscore the importance of taking into account physician gender when training physicians in patient-centered communication as well as taking gender differences into account in the relationship between supervisors and their subordinates within organizations. Especially since the results are very different from patient-physician relationship to supervisor-subordinate relationship like explained below.

In fact, studies included in this thesis yield contradictory results. When looking at results for informal hierarchy, which is patient-physician relationship, results from my first paper suggested there are gender differences do exist when it comes to self-disclosure. Male physicians self-disclosed more to a certain type of patients, however, female physicians self-disclosed more than male physicians in general. However, we had less understanding as to which female physicians do so and to which patients.

Our second study's results reveal that physician gender and physician self-disclosure did not affect patient outcomes but had an effect on the behavioral intentions of the patients (i.e., willingness to self-disclose) and this was moderated by physician gender. Patients were more willing to self-disclose to female than to male physicians who self-disclosed.

One can wonder why on one hand, self-disclosure had no effects, minor effects or different effects depending on the study. This is argued in more detail in the discussion section of each paper.

For formal hierarchy, results suggested that there were no gender differences in how subordinates perceived supervisor self-disclosure However, when men supervisors self-disclosed, this had positive effects and when women supervisors self-disclosed, this had negative or no effects with the exception of when the self-disclosure was perceived as honest, in which case it was also positive for female supervisors.

All studies reveal that gender differences do exist when it comes to self-disclosure, no matter the type of hierarchical relationship, however effects differ depending on the discloser's gender on different recipient outcomes. According to our studies, self-disclosing produces rather negative effects for male disclosers and positive effects for female disclosers in informal hierarchy setting while in formal hierarchy setting it is the opposite. Negative effects are seen for female disclosers and positive effects for male disclosers. This can be explained by different theories such as the *lack of fit model*, *the ambivalent sexism theory* or t*he gender congruity theory*. These are explained in more details in the different papers

My research also adds to what is known about self-disclosure. Specifically, it shows that self-disclosure is perceived differently depending on the gender of the discloser. In fact, in the formal hierarchy context (supervisor-subordinate relationship), when male supervisors self-disclose, it has positive effects and if female supervisors self-disclose, it has negative or no effects. In the informal hierarchy context (patient-physician relationship), however, when female physicians self-disclose, this might be beneficial for the clinical relationship because it entails more self-disclosure on the part of the patient which is important for diagnosis and treatment recommendations. For male physicians, self-disclosure has a negative impact on patients. This could be explained by the fact that in the physician-patient relationship, self-disclosure is part of good practice (empathy) but in the superior-subordinate relationship, even though it is very unexpected, it is a behavior that creates liking and establishes bonds, so when

male supervisors do it, they get credit for it. For female supervisors, it might simply underscore their gender role and since already incompatible with leadership, is not to their benefit to self-disclose

Future research

My work calls for future research. First, future research is needed to replicate findings from my three papers, using different samples as well as different experimental designs. From my first paper, the data is restricted to experienced primary care physicians in the French speaking part of Switzerland and may not be generalizable to other areas of medicine or to less experienced physicians.

From my second paper, analogue patients were young, mostly Caucasian and in good health, thus not representative. Future research could also conduct this experiment with video vignettes rather than dialogues in order to emotionally engaged students.

From my third paper, future research could focus on investigating self-disclosure from the supervisor's perspective. It would also be interesting to investigate and collect data from real-life supervisor-subordinate conversations to code their conversations and examine the characteristics of self-disclosure statements and especially, categorize the type of self-disclosure statement made by both parties. This would help to have a clearer picture as to what type of self-disclosure statements are typically used during these interactions. New technologies available could also be used to record real-life conversations between supervisors and their subordinates to see for instance whether subordinates also self-disclose in response to their supervisor self-disclose.

Conclusion

Because the interaction of gender and self-disclosure in hierarchical relationships not being studied in past research, this research significantly contributes to the literature by offering new insights to understand self-disclosure mechanisms and its effects on its recipients. This approach contributes to our understanding of how individuals can improve interpersonal communication between them and others in different contexts. My desire is that this approach will be used by future research to thoroughly investigate self-disclosure and gender in different hierarchical relationships.

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PART 2: DISSERTATION PAPERS

Paper 1: Physician Self-Disclosure During Medical Encounters: A Gender Study

Keou Kadji, Department of Organizational Behavior, University of Lausanne, Switzerland

Marianne Schmid Mast, Department of Organizational Behavior, University of Lausanne, Switzerland

Valerie Carrard, Empowerment, Participation & Social Integration Unit, Swiss Paraplegic Research, Nottwil, Switzerland

Corresponding author at:

Keou Kadji, Department of Organizational Behavior, University of Lausanne, HEC Lausanne, Quartier Unil-Chamberonne, CH-1015 Lausanne, Switzerland, Tel: +41 78 950 04 49, E-mail: keoukambiwa.kadji@unil.ch

Abstract

Objectives: Research documents that physician self-disclosure in medical encounters is very common. When exactly they self-disclose and whether the effects of self-disclosure are similar for patients of female and male physicians remains unclear. The goal of this research is to investigate physician self-disclosure during medical consultations under a gender perspective.

Method: In two different studies, general practitioners were videotaped during their usual practice and both patients and physicians answered a series of questionnaires measuring their attitude towards the physician with respect to satisfaction, trust, adherence, enablement, and the competence of the physician (both interpersonally and professionally).

Results: The most common type of self-disclosure statements are counselling. Self-disclosure statements mostly occurred during the history taking and the counselling segments of the consultations. Male physicians who were affiliative or showed empathic concern were more likely to self-disclose. Female physicians who self-disclosed were perceived as more professionally and interpersonally competent and had patients who trusted them more.

Conclusion: Gender differences exist when it comes to self-disclosure in patient-physician interactions.

Practice implications: Results from our studies have important implications for the training and clinical practice of physicians Our research shows that there are still many gender stereotypes linked to the medical profession and that there should be increased awareness of such stereotypes. For example, male physicians could be taught to be careful with their self-disclosure and might hold back if they want the trust of their patients.

Physician Self-Disclosure During Medical Encounters: A Gender Study

1. Introduction

It is important for patients and physicians to develop a close relationship because accurate diagnosis and effective treatment depend on the quality of this relationship (Kaba & Sooriakumaran, 2007; Stewart et al., 1999). One of the tools physicians can use to create trustworthy relationships as part of the patient-centered approach to medical care is self-disclosure, which is reported to establish empathy and understanding between physicians and patients (Allen & Arroll, 2015). Self-disclosure is defined as the act of revealing private information about oneself as well as expressing motives, needs, wants, goals, fears, and feelings in general (Laurenceau, Barrett, & Pietromonaco, 1998) and plays a major role in developing, maintaining, and enhancing close relationships (Rimé, 2016). In the present research, we focus on physician self-disclosure and use a rather broad definition of self-disclosure. Physician self-disclosure is any statement made to a patient that describes the physician's personal experience (Roter, 1991). Physician self-disclosure has been claimed to be central in assuring patients that they are understood as individuals, that their physician cares about them, and that they are more than just another medical case for them (Yedidia, 2007).

Despite the evidence, suggesting that physician self-disclosure is positive, physician self-disclosure might not always be perceived in such a positive way by patients. In fact, physicians' personal revelations to patients have not only been described as a way of fostering trust in the physician-patient relationship but also as a boundary violation (Gabbard & Nadelson, 1995). It seems that physician self-disclosure is particularly effective when the self-disclosure is consistent with the advice given to the patient meaning physicians' abilities to motivate patients to adopt healthy habits can be enhanced by conveying their own healthy habits.(Frank, Breyan, & Elon, 2000). Therefore, although self-disclosure is commonly used

by physicians during their medical encounters (Beach et al., 2004; McDaniel et al., 2007), we not only lack a clear picture concerning the results of physician self-disclosure, we also do not know which physicians are more likely to show it towards which kind of patients, or if there are gender differences in physician self-disclosure.

1.1 Existing empirical evidence

Previous research has shown that physician self-disclosure is used during medical consultations. Beach et al., (2004) reported that 71% of physicians self-disclose during at least one visit and Holmes et al., (2010) observed a similar number of 75% of visits containing at least one instance of self-disclosure. Physician self-disclosure was significantly associated with higher patient satisfaction ratings for surgical visits but with lower patient satisfaction ratings for primary care visits (Beach et al., 2004). However, McDaniel et al., (2007) found no evidence of an effect of physician self-disclosure on patient satisfaction.

The study previously mentioned by Holmes et al., (2010) found that physician self-disclosure in a primary care setting was positively related to patient satisfaction. These mixed results show that it is still not clear within the literature whether physicians should self-disclose to their patients or not. A systematic review conducted by Arroll and Allen (2015) reviewing 9 different studies of self-disclosure in primary care and medicine, confirmed that the impact of physician self-disclosure on patient outcomes is still not well understood. Additional empirical studies are thus needed to determine in which circumstances physician self-disclosure can impact patient outcomes. Moreover, only one of the studies above has looked at gender differences stating that adjustments for gender did not fundamentally change their result which was that primary care patients remained significantly less satisfied and surgical patients remained more satisfied following self-disclosure from their physicians (Beach et al., 2004). However, they did not assess how physician and patient gender dyads affected physician self-

disclosure or patient outcomes (e.g., satisfaction). None of the studies cited here looked at gender differences in the way it will be looked at in this paper, meaning whether female or male physicians differ in how and when they self-disclose and what effect it has on their patients.

1.2. What type of self-disclosure is produced by physicians and in which consultation segment?

An aspect still in need of investigation is physician self-disclosure during different segments of the medical consultation. In fact, previous research by Eide, Graugaard, Holgersen, and Finset (2003) showed that the same physician behavior can trigger different effects on patient outcomes depending on the consultation phase they were displayed in. Physician communication elements such as informal and social talk were correlated with patient satisfaction during the history-part of the consultation, but patients were dissatisfied with the same informal talk during the examination segment of the consultation. The reason stated is that, it seems important to establish rapport with the patient by spending some time on informal and non-medical talk during the history-taking segment of the consultation. Similarly, self-disclosure could impact patient outcomes differently depending on when in the medical encounter it is shown. In the present research, we look at when physicians self-disclose during the medical encounter.

Research question 1: Do different segments of the medical consultation differ in the amount of physician self-disclosure depending on the gender of the physician?

1.3. Who are the physicians who self-disclose? Who are the patients who receive self-disclosure?

Personality characteristics associated with self-disclosure are not very well understood. Altman and Taylor (1973) state that it is unrealistic to expect to find specific traits in disclosure relationships. Their approach is to explore the relationship between personality and self-disclosure in the context of specific relationships and settings such as married couples or friendships. As there is an apparent lack of research on the personality characteristics of physicians who self-disclose in a medical consultation context, we will investigate if there is a relationship between traits of the physician such as affiliativeness and empathic concern and physician self-disclosure. In fact, previous research has shown that affiliative individuals were more self-disclosing and more intimate in their self-disclosures (Ksionzky and Mehrabian, 1980). We therefore hypothesized:

Hypothesis 1: Physicians' affiliativeness and empathic concern will be positively related to physician self-disclosure and this relationship will be stronger for female physicians compared to male physicians.

1.4. Is physician self-disclosure related to patient outcomes?

1.4.1 Gender and self-disclosure

Physician gender has been shown to influence both patients and physicians' behaviors as well as patient outcomes (Hall & Roter, 2002; Roter & Hall, 2004). It has been shown that female physicians tend to disclose more information about themselves compared to male physicians (Hall & Roter, 2002), but none of the previous studies specifically investigated the effects of these gender differences in physician self-disclosure on patient outcomes. Whether the self-disclosure of a female physician affects her patients more positively than the self-disclosure of a male physician is unknown. Female physicians' behavior reflects what can be considered as typical female behavior observed in non-clinical populations, which is

characterized by showing more emotions (both verbally and nonverbally) as well as more self-disclosure (Brody & Hall, 2008; Dindia & Allen, 1992; Fischer, 2000).

Hypothesis 2: Female physicians self-disclose more to their patients than male physicians.

If we consider the *lack of fit* model (Heilman, 1983, 1995), which 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, one might hypothesize that the more a female physician self-discloses, the more satisfied her patients would be, because women are expected to be more interpersonally oriented and to talk more about themselves (Dindia & Allen, 1992).

Conversely, for male physicians, when they show the non-expected patient-centered communication style (in this case using self-disclosure), they are perceived as going out of their way to accommodate their patients by using an unexpected positive communication and this gets noticed by patients in a positive way (Blanch-Hartigan et al., 2010; Carrard & Schmid Mast, 2015; Hall et al., 2015). Therefore, it can be expected that, relative to female physicians, it is patients of male physicians who will benefit moe from self-disclosure, because this kind of relationship-fostering behavior is less expected from male than from female physicians. We set out to investigate these predictions. According to Schmid Mast and Kadji (2018), when female and male physicians show the same behavior, they are not evaluated in the same way, possibly due to patients' different expectations about how a female and a male physician should behave. This is why we put forward the following hypothesis:

Hypothesis 3: The relation between physician self-disclosure and positive patient outcomes will be stronger for male physicians than for female physicians.

1.5 The current research

We conducted two studies and because they are very similar, we first describe the method used in both studies and then present the results for both studies, instead of a more traditional organization presenting Study 1's method and results and then Study 2's method and results.

In both studies we measured patient satisfaction and trust. We chose to study patient satisfaction because it is an important and commonly used indicator for measuring the quality in health care (Prakash, 2010) and patient trust because according to the literature there seems to be a general consensus that there is a relationship between trust and self-disclosure (Cozby, 1973; Pearce& Sharp, 1973). Despite the fact that many investigators of self-disclosure have argued that some relationship exists, little empirical research has confirmed this notion and we would like to investigate this relationship in a medical context.

For Study 1, we added an additional dependent variable which is patient adherence because previous studies showed the level of a physicians' interpersonal skills has been connected to other important metrics for health care organizations, including: adherence to recommended therapy (Ha et al., 2010; Gallagher et al., 2005) and physician professional competence because there have been longstanding debates on the use of self-disclosure by physicians: in fact, self-disclosure has been described by some as a boundary violation, and by others as a method to build trust and rapport (Allen & Arroll, 2015. However, little is known about the impact physician disclosure may have on physician professional qualities from the perspective of actual patients. For Study 2, we used patient enablement because previous research show that physician disclosures of their own healthy behaviors can also enhance patient motivation about their own health (Frank et al, 2000).

2. Method

2.1 Study 1

This study uses data from a previous project in the field (Cousin, Schmid Mast, & Jaunin-Stalder, 2013). In this former project, general practitioners were videotaped during their usual practice and both patients and physicians answered a series of questionnaires. Results unrelated to the present research questions have been published (Cousin, Schmid Mast, & Jaunin-Stalder, 2013).

2.1.1 Participants

Seventy-two general practitioners from the French-speaking part of Switzerland were contacted by mail or telephone. Thirty-six of them, 20 men and 16 women, responded positively (mean age = 47 years, range = 34 to 68).

Patients included in the study consulted the recruited physicians for various reasons (e.g., for check-ups, back pain, stomach pain, flu). A total of 69 patients completed the study (36 men, 33 women; mean age = 51 years; range = 18 to 84). They were recruited in the waiting room and exclusion criteria were as follows: aged less than 18 years, not a fluent French speaker, or had already consulted the physician more than six times. The last criterion was introduced to avoid a ceiling effect concerning our outcome variable. Indeed, it is assumed that patients who know their physician very well would tend to be very satisfied because otherwise, they would have looked for another doctor.

2.1.2 Procedure

For this study, only physicians were videotaped during the medical consultations. The patients' voices could be heard off camera, but no patient appeared in the videos. Both physicians and patients were given explicit information on the recording, and prior to the consultations they provided signed informed consent to be recorded. Directly after the

consultation, the patients were provided with a questionnaire measuring their attitude towards the physician with respect to satisfaction, trust, adherence, and the competence of the physician (both interpersonally and professionally). The number of previous visits made to that physician, the patient's gender and age were also indicated by the patient. Physicians reported their years of practice, age, and gender. Based on the videos, we then coded physician self-disclosure.

To establish the credibility of our findings when coding the videos, 32 (10% of the total number of videos) same videos where coded by the 7 coders of this study (including the main researcher), independently, then the main researcher assessed the amount of agreement between the different coders on how they assigned categories to the self-disclosure statements. The coders had 9 sheets for 9 different self-disclosure categories that could be found in the videos, to prevent coders from coding different items in the same category of self-disclosure, for each video. Finally, to make sure the coding was as harmonized as possible, the main researcher also coded the same 32 videos and these videos were separated into different consultation segments, so we knew how many self-disclosure statements were found during each consultation segment, which gave an even clearer picture to compare the amount of agreement between the coders.

2.1.3 Measures

Self-disclosure. Each videotaped physician-patient consultation (N = 69) was coded for self-disclosure by four trained coders. Following the same procedure used by Beach et al. (2004), self-disclosure was coded into 8 different types (reassurance-short/long, counselling, rapport humor, rapport empathy, casual, intimacy, and extended narratives; see Appendix A). The self-disclosure related to different topics of conversation including *discussion of personal emotions* (e.g., "I find it enjoyable to do things together") and *experiences* (e.g., "Mexico is part of the destinations I'd love to go to one day"), *families and/or relationships* (e.g., "My

mother-in-law tried it once"), or *professional descriptions* (e.g., "I think he is a very reliable ophthalmologist"). The raters coded the number of physician self-disclosure statements during each medical consultation and placed them under their suitable 8 types. Interrater reliability was calculated on a random subset of 31 videotapes coded by all four coders and the reliability coefficient (mean correlation coefficient across all raters) was r = .86. To control for consultation duration, we created a variable of relative physician self-disclosure by dividing the total number of physician self-disclosures (all types included) by the length of each consultation (in min).

Consultation segmentation. We divided the consultations into 6 different segments according to Byrne and Long (1976). The *opening phase* consists of an informal conversation with the patient. The aim of this phase is to establish a relationship with the patient in order to start the clinical interaction (Bagheri, Ibrahim, & Habil, 2015). *History-taking* is the second phase of the consultation during which the physician attempts to understand the reason for the patient's visit by asking relevant questions about the existing health issue. In the third phase, the *exam phase*, the physician examines the patient's health problem verbally or physically. *Diagnosis* is the fourth phase in which the physician presents the patient's health condition based on elicited medical information. The fifth stage is offering *clinical treatment and professional advice* based on the diagnostic findings. In this study, it was not easy to distinguish the diagnosis and treatment-offering phases. We thus combined them into a single segment called *counselling phase*. At the sixth and last stage, after making treatment decisions, the consultation is terminated, but there can be additional informal conversation between the physician and the patient in this *closing phase*.

Patient satisfaction. Patient satisfaction was assessed with three items from a scale previously used in the field (Cousin & Schmid Mast, 2013, 2016; Langewitz, 1995): "I'm

absolutely satisfied with the way my physician has conducted this medical interview", "For certain things, the interview could have been a little better" (reverse-scored item), and "The general attitude and behavior of my physician suited me perfectly well". Patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree; *M* = 4.62, *SD* = 0.73, Cronbach's alpha = .74).

Patient trust. Patient trust was assessed with two items: "I completely trust my physician" and "My physician seems absolutely trustworthy" previously used by Cousin et al., (2013). Patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree; *M* = 4.67, *SD* = 0.53, Cronbach's alpha = .92).

Patient adherence. Patient adherence was measured with three items on which patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree). The three items were: "I am determined to strictly follow the treatment or advice"; "I do not think I will follow all the treatment or advice" (reverse-scored item), and "I will strictly follow my physician's recommended treatment and advice" (*M*= 4.50, *SD*= 0.85, Cronbach's alpha = .80).

Patient perceived physician professional competence. How professionally competent the physician was perceived by the patient was assessed with the three following items: "I find my physician perfectly competent professionally", "My physician could not know his/her job better", and "My physician is really skilled in communication". Again, patients indicated their agreement on 5-point Likert scales (1 = do not agree at all, 5 = totally agree; *M* = 4.39, *SD* = 0.77, Cronbach's alpha = .90).

Patient preference for physician communication style. Patients' preferences were assessed using the Patient-Practitioner Orientation Scale (Krupat et al., 2000) before the consultation. This scale measures patients' preferences for their physician's caring and sharing

interaction style. The caring dimension can be defined as the extent to which a physician shows empathy, warmness, and exploration of the patient's perspective whilst the sharing dimension describes how the physician shares control over the consultation, gives information, and negotiates the treatment decision (Krupat et al., 2000). Patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree). A sample item for the caring dimension is: "A treatment cannot be successful if it is in direct conflict with the lifestyle or values of the patient" (M = 3.91, SD = 0.49, Cronbach's alpha = .64); and in the sharing dimension: "Patients should be treated as partners, equal in power and status" (M = 3.48, SD = 0.63, Cronbach's alpha = .69)

Consultation frequency. It is possible that physicians self-disclose more to patients they know better. Therefore, we assessed consultation frequency to test whether it is related to physician self-disclosure. Consultation frequency was assessed through a questionnaire in which patients indicated how many times they had consulted this physician previously (1 = less than once a year, 5 = more than 6 times a year; M = 2.58, SD = 1.2).

Severity of the medical problem. A list of the patients' medical problems verbalized by the physicians in the videos was created by a research assistant. A physician then rated the severity of each patient's medical condition based on the list. The physician used a 5-point Likert scale (1 = very minor medical problem that has no or little consequences on the patient's life and functioning; 5 = very serious medical problem that has a massive impact on the patient's life and functioning; M = 2.62, SD = 1.16).

Patient's need for further treatment. Patient agreement with the need for further treatment has been proven to be a determinant for adherence (Haynes, Ackloo, Sahota, McDonald, & Yao, 2008). This was assessed in the current study by asking the patients the

following: “Does your medical problem require treatment or follow-up?” (1 = No, 2 = Yes, 3 = I don’t know; *M* = 1.76, *SD* = .49).

Physician affiliativeness. Physician affiliativeness was rated by an external rater, who watched the videotapes, on a 7-point Likert scale (1 = not at all; 7 = extremely) based on the revised Interpersonal Adjective Scale (Wiggins, Trapnell, & Phillips, 1988) with the following adjectives : “kind”, “gentle”, “agreeable”, “empathetic”, “cold” (reversed). The ratings on the 5 adjectives were then averaged (*M* = 5.34, *SD* = .90, Cronbach’s alpha = .90).

Physician dominance. Dominance was rated by an external rater who watched the videotapes using the same revised Interpersonal Adjective Scale (Wiggins et al., 1988). It measures the degree to which the physician is described as ‘self-confident’, ‘dominant’, ‘authoritative’, ‘shy’ (reverse-scored) and ‘unsure’ (reverse-scored) with a 7-point Likert scale (1 = not at all, 7 = extremely; *M* = 4.55, *SD* = 0.78; Cronbach's alpha = .80).

2.2 Study 2

Data for this study stems from a larger dataset from a previous project in the field. This dataset includes videotaped consultations and questionnaires collected from practitioners working in private practices in the French part of Switzerland (Carrard, Schmid Mast, Jaunin-Stalder, Junod Perron, & Sommer, 2018).

2.2.1 Participants

More than 400 general practitioners were contacted by phone or mail. A total of 61 physicians (27 women, 34 men; mean age = 51.12, range = 33 to 70) and 244 patients (122 women, 122 men; mean age = 57 years, range = 18 to 97) completed this study. Each physician was filmed while in consultation with four different patients (two female and two male patients) recruited in the waiting room. To be included in this study, the patients had to be fluent in

French, above the age of 18, and present no psychiatric disorder. Patients consulted for various reasons.

2.2.2 Procedure

Prior to the consultations, physicians were asked to complete an online emotion recognition test, fill in an empathy questionnaire, and answer different socio-demographic questions such as age, gender, and years of practice. Prior to the consultation, patients filled in an informed consent form and a short questionnaire assessing their preference according to their physician's sharing and caring interaction style. During the consultation, the physician was filmed, and the patient's voice could be heard. At the end of the consultation, patients were asked to evaluate the consultation (satisfaction, trust, and enablement) and to report socio-demographic information such as age and gender. Physician self-disclosure was coded based on the videotaped consultations.

2.2.3 Measures

Self-disclosure. Self-disclosure was coded in the same way as in Study 1.

Consultation segmentation. This was also divided in the same way as in Study 1.

Empathy. Prior to the consultations, physicians filled in the *perspective taking* and *empathic concern* subscales using the Interpersonal Reactivity Index (Davis, 1983). In this self-report questionnaire, physicians indicated their degree of agreement on a 5-point Likert scale (1 = does not describe me well, 5 = describes me well). The *perspective taking* subscale of the questionnaire is the tendency to spontaneously adopt the point of view of others and is measured with 7 items such as "Before criticizing somebody, I try to imagine how I would feel if I were in their place", "I sometimes find it difficult to see things from the "other guy's" point of view" (reversed scored), or "I believe that there are two sides to every question and try to

look at them both" (*M* = 3.74, *SD* = 0.58, Cronbach's alpha = .77). The *empathic concern* subscale measures the level of concern for unfortunate others. It also contains 7 items such as "When I see people being taken advantage of, I feel kind of protective towards them", "I am often quite touched by things that I see happen", or "I would describe myself as a pretty soft-hearted person" (*M* = 3.23, *SD* = 0.48, Cronbach's alpha = .70).

Patient satisfaction. Patient satisfaction was assessed with three items taken from a validated scale (Langewitz, 1995): "I am fully satisfied with my consultation with this doctor.", "Certain elements of my consultation with this doctor could have been improved", and "I am not fully satisfied with my consultation with this doctor", the latter two being reversed. Patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree; *M* = 4.60, *SD* = 0.57, Cronbach's alpha = .71).

Patient trust. Patient trust was assessed with four items from the same validated scale as patient satisfaction (Langewitz, 1995): "I fully trust my doctor with the therapeutic decisions that concern me", "I have no fear of putting my life in my doctor's hands.", "My doctor only thinks about what is best for me.", and "In the end, I have full trust in my doctor." Patients indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree; *M* = 4.61, *SD* = 0.51, Cronbach's alpha = .73).

Patient enablement. Patient enablement was assessed with the Patient Enablement Instrument (Howie, Heaney, Maxwell, & Walker, 1998) consisting of six items: "After the consultation, I am apt to face life", "After the consultation, I am apt to understand my medical condition", "After the consultation, I am apt to face my medical condition", "I am apt to keep myself in good health", "I am confident about my health", and "I am apt to take care of myself". Patients indicated their degree of agreement on a 3-point Likert scale (1= same or less; 2 = More; 3 = Much more; *M* = 2.01, *SD* = 0.63, Cronbach's alpha = .91).

Patient preference for physician communication style. The same Patient-Practitioner Orientation Scale (Krupat et al., 2000) was used as in Study 1 (*M* = 3.17, *SD* = 0.64, Cronbach's alpha = .68 for sharing; *M* = 3.50, *SD* =.51, Cronbach's alpha = .48; for caring).

Consultation frequency. Patients indicated how many times they had previously consulted this physician (1 = less than once a year, 5 = more than 6 times a year; *M* = 3.01, *SD* = 1.41).

Severity of medical problem. Patients were asked to describe the severity of the illness they were consulting for on a 5-point Likert scale (1 = not severe, 5 = very severe; *M* = 1.79, *SD* = 0.86).

3. Analyses and Results

The result section is organized around the research questions and presents the results of Studies 1 and 2.

Physician self-disclosure occurred at least once in 92.75% (Study 1) and in 96.31% (Study 2) of the consultations.

3.1 What type of self-disclosure is produced by physicians and in which consultation segment?

One of the aims of this paper was to identify the types of self-disclosure statements used by physicians. Specifically, we wanted to answer the following research question: Do different segments of the medical consultation differ in the amount of physician self-disclosure? The descriptive analysis of the data involved counting the number of physician self-disclosure

statements in each type of self-disclosure and for the different consultation segments. We looked at the results for female and male physicians separately.

Table 1 shows that for both studies, when looking at the total statements of self-disclosure during consultations, the two most common types were counselling type and casual type self-disclosure statements. Rapport empathy statements were the third most common type followed by reassurance and rapport building (i.e., humor). Intimacy and extended narrative statements were rare. Looking at these distributions separately for female and male physicians, the picture does not change much because the most common type remained counsellinf and casual for male and female physicians, and intimacy and extended types were rare for both male and female physicians as well.

Another aspect that we want to investigate is to determine in which consultation segment physicians self-disclose. According to Table 2, in both studies, physicians mostly self-disclosed during the history segment of the consultation, followed by the counselling phase, which consists of information giving or counselling regarding the patient's medical condition, proposed therapeutic regimen, and/or other lifestyle or psychosocial information or suggestions. The third segment with the most self-disclosure was the exam segment followed by the opening and the closing segments. Again, the picture looks very similar for female and male physicians.

3.3. Who are the physicians who self-disclose? Who are the patients who receive self-disclosure?

3.3.1 Who are the physicians who self-disclose?

In Study 1, there were on average 8.27 self-disclosure statements per consultation (*SD* = 6.83), with an average of 7.83 self-disclosure statements for female physicians (*SD* = 5.55)

and 8.63 self-disclosure statements for male physicians (*SD* = 7.78). Study 2 had on average 9.64 self-disclosure statements per consultation (*SD* = 6.65); with an average of 9.69 self-disclosure statements for female physicians (*SD* = 5.50) and 9.61 self-disclosure statements for male physicians (*SD* = 7.46).

To test for gender differences, we compared the proportion of consultations between male and female physicians ,where there was physician self-disclosure . For Study 1, the results from the two-sample test of proportions indicated that there was no significant gender difference ($t = 0.23$, $p = .41$). For Study 2 however, there was a significant difference between female ($M = .99$, $SD = .01$) and male physicians ($M = .94$, $SD = .02$). Female physicians disclosed significantly more than male physicians ($t = 2.04$, $p < .05$), which validates our hypothesis 2.

Linear regressions were used to examine the associations between physician characteristics and physician self-disclosure in both studies. Note that the physicians either saw two patients (Study 1) or four patients (Study 2) meaning our data are clustered by physicians with a potential correlation from observations within the same cluster. To make sure we accounted for this correlation and obtained the correct variances we modelled linear regressions with standard errors adjusted for clusters. The unit of analysis was the individual physician (level 2). The dependent variable was physician self-disclosure (controlled for consultation length). The independent variables were physician gender, physician age, experience (years since graduation from medical school), physician affiliativeness and physician dominance for Study 1 and physician gender, age, experience, empathy and emotion recognition accuracy for Study 2. For each study, we ran separate regression models for overall, female, and male physicians and the interaction term between physician self-disclosure and physician gender was added to all models..

For Study 1 (Table 3), overall results show that physician affiliativeness was significantly positively associated with more self-disclosure, which validates our hypothesis 1: Physicians' affiliativeness was positively related to physician self-disclosure. There was no significant interaction effect for physician self-disclosure and physician gender, however, for investigating purposes we still ran separate regression models for male and female physicians and found that this result only held for male physicians and not for female physicians. No other characteristics were significantly associated with self-disclosure.

For Study 2 (Table 4), only empathic concern was significantly positively associated with self-disclosure for the entire sample, which also validates our hypothesis: Physicians' empathic concern will be positively related to physician self-disclosure. The separate regression models for male and female physicians demonstrated that, again, this result only held for male physicians but not female physicians.

3.3.2 Who are the patients who receive self-disclosure?

We ran a clustered linear regression model to examine the associations between patient characteristics and physician self-disclosure. Again, for both studies, the unit of analysis was the individual physician. The dependent variable was physician self-disclosure (controlled for consultation length). The independent variables were patient gender, patient age, patient preference for physician interaction style (sharing and caring), patient perceived gravity of illness, patient need for further treatment, whether the patient had previously consulted with this physician and patient consultation frequency (in general) for Study 1; patient gender, age, education level, whether the patient had previously consulted this physician, patient consultation frequency (in general), patient preference for physician interaction style (sharing and caring) for Study 2. For each study, we ran separate regression models for overall, female, and male physicians.

For Study 1 (Table 5), overall the results show that the patient's need for further treatment was significantly positively associated with physician self-disclosure. When we looked at the separate regressions for male and female physicians, this result held for male physicians but not for female physicians. No other patient characteristics were associated with female or male physician self-disclosure.

For Study 2 (Table 6), no patient characteristics were significantly associated with physician self-disclosure. The same results emerged for female physicians. However, when looking at the male physicians, the older they were, the more often they had seen the patient and the more the patient preferred a caring interaction style, the more the male physician self-disclosed.

3.2 Is physician self-disclosure related to patient outcomes?

We also investigated the impact of physician self-disclosure on patient outcomes. We ran separate linear regressions with cluster models for each of the following dependent variables: patient satisfaction, patient trust, patient adherence, and perceived physician competence for Study 1 and patient satisfaction, patient trust, and patient enablement for Study 2.

Our independent variable of interest was self-disclosure in both Studies 1 and 2, and we added the following control variables for both studies: severity of the illness, physician age, patient age, patient gender, patient sharing preference, patient caring preference, consultation frequency, and physician experience. We also added the interaction term between physician gender and self-disclosure in the models in order to understand the relationship between those two variables.

For Study 1, as shown in Table 7, overall physician self-disclosure had no effect on patient satisfaction and patient adherence. It had a marginally significant positive effect on patient trust and a significantly positive effect on perceived physician competence. There was a significant interaction effect between self-disclosure and physician gender for patient trust and patient perceived physician professional competence. Therefore, we investigated the results for self-disclosure and outcomes separately for female and male physicians. As Table 8 shows, patient trust was significantly positively related to physician self-disclosure for female physicians and significantly negatively related to physician self-disclosure for male physicians. Similar results derived from perceived physician competence. It was significantly positively related to female physician self-disclosure but negatively related to male physician self-disclosure. These results lead us to reject our initial hypothesis 3 which was that the relation between physician self-disclosure and positive patient outcomes would be stronger for male physicians than female physicians.

For Study 2, results show that physician self-disclosure had no effect on patient satisfaction, patient trust, or patient enablement (Table 9). When running separate analyses for male and female physicians, the results were similar for both male and female physician self-disclosure: no significant effect on patient satisfaction, patient trust, or patient enablement.

4. Discussion and conclusion

4.1 Discussion

The aim of this research was to investigate which, how, and when physicians use self-disclosure during medical encounters and how physician self-disclosure relates to physician and patient characteristics and to consultation outcomes. For the studies in this thesis, we did not count the number of words or seconds the self-disclosure statement rather just counted and

categorized the instances of self-disclosure like it was done in the study we based our methodology on (Beach et al., 2004.

Based on two studies in general practices, we show that physician self-disclosure does happen during medical consultations: in over 90% of the consultations, there was at least one self-disclosure statement from the physician. This shows even more physician self-disclosure than what had previously been documented in the literature (Beach et al., 2004; Holmes et al., 2010; McDaniel et al., 2007) where self-disclosure occurred in 14-75% of the consultations. It is not clear whether this difference stems from the cultural differences of the studies because the present research was conducted in Switzerland whereas the other studies are all U.S. based. The difference possibly comes from our studies looking at general practitioners who might take more time with their patients and in some cases had already seen their patients in the past and thus might know them better. In the other studies, the physicians were assigned standardized patients or there was no mention of whether the patients had previously consulted the physicians. Alternatively, the patients in our studies were older than the patients in the other studies and physicians might disclose more to elderly patients as suggested by one of our results (male physicians self-disclosing more to elderly patients in Study 2).

We also show that the most common type of self-disclosure statements are counselling (e.g., "*I think it is a very good exercise, I personally do it sometimes.*") and casual (e.g., "*I have been here for 20 years, I studied in Lausanne.*" Beach et al., (2004) reported that counselling was the second most used type of self-disclosure and casual came in fourth place. The most common type of physician self-disclosure statement in their study was reassurance (e.g., "*It's a good exercise, I personally do it sometimes*") This difference might be due to the patients in their paper presenting more severe health conditions (their sample included general practitioners but also surgeons) which might have elicited more reassurance on the side of the

physician. In accordance with the results in Beach et al., (2004) self-disclosure statements of intimacy and extended narratives were also rare in our studies.

Regarding gender differences in the types of physician self-disclosure, our results show no significant gender effect. In fact, the picture per physician gender is similar to the overall physician self-disclosure picture when it comes to the type of self-disclosure. Also, in Study 1, there is no gender difference in the amount of self-disclosure, which is in line with the results of previous studies (e.g. Cho, 2007; Sprecher & Hendrick, 2004). However, Study 2 shows that female physicians self-disclose significantly more than male physicians, which also replicates the results found in the literature on self-disclosure in the general population where women are found to self-disclose more than men (Dindia & Allen, 1992). This difference between both studies could be explained by the fact that we only had 16 female physicians in Study 1, which means that we did not have enough statistical power in this study to detect a gender effect. Several studies outside the physician-patient communication domain support the notion that females disclose more than males (e.g. Dindia & Allen, 1992; Schaef, 1992) and according to Jourard (1971), males disclose less than females because the male role prohibits male self-disclosure. Society expects men to be tough, strong, and emotionally unexpressive, while women to be nurturing and expressive (Yu, 2014). In a context such as a medical consultation where the physician needs to improve patient comfort, it is not surprising to find that female physicians are expressive; the fact that female physicians are more emotionally expressive, more egalitarian in their interpersonal relationships than men is well-documented in a meta-analytic review (Roter, Hall, & Aoki, 2002).

We also explored when physician self-disclosure occurred during the medical visit. Our results showed that self-disclosure statements mostly occurred during the history taking and the counselling segments of the consultations. These might be the most appropriate moments

to self-disclose. This finding is in line with results from a study by McDaniel et al., (2007) showing that physician self-disclosure mostly occurs during the history segment of the medical consultation. For both Studies 1 and 2, there was no gender difference with respect to when, during the consultation, most self-disclosure occurred.

The third aspect we investigated in this research was the characteristics of the physicians who self-disclosed. Our results showed that physicians who are affiliative (Study 1) or showed empathic concern (Study 2) were more likely to self-disclose, but that this effect was driven by male physicians. Self-disclosure is a means to create rapport as well as to express empathy and it seems that physicians who are affiliative and more empathic use self-disclosure to create closeness to others. Previous studies show that individuals with affiliative behavior are more confident and relaxed in social situations and put their social partners at ease (Mehrabian & Ksionzky, 1974) and these individuals also tend to self-disclose more (Ksionzky & Mehrabian, 1980). There is also support from the literature that individuals that are empathic and warm, self-disclose more easily (Skoe Eva & Ksionzky, 1985). For both of our studies, these results only held for male physicians, meaning that more interpersonal orientation (e.g., more affiliativeness or more empathy) was related to more self-disclosure in male physicians only. It is possible that for women, self-disclosure or being friendly in a conversation are simply different manifestations of their affiliativeness, meaning that they do not necessarily use self-disclosure to create closeness; self-disclosure is simply another manifestation of their affiliativeness among others and that is why it is not correlated in female physicians.

To which patients do physicians self-disclose? For both studies, results only held for male physicians. In fact, no patient characteristic was significantly associated with more or less female physician self-disclosure. Our results for Study 1 show that patients who have a need for further treatment are those who receive more self-disclosure from their male physicians.

For Study 2, patient characteristics were also only associated with male physicians. Male physicians self-disclosed more to older patients, to patients who had a preference for a caring interaction style, and to patients they had known previously. It seems that male physicians tend to self-disclose more to more vulnerable patients (e.g., needing treatment, older, in need of a caring interaction style) and to patients they know better. Research shows that self-disclosure can be used to reassure and create a bond and elicit trust (Chaudoir & Fisher, 2010) and research also shows that self-disclosure is more common among people who know each other well (Jourard, 1959).

Female physicians might disclose to everybody equally. On the other hand, male physicians seem more selective in the way they display self-disclosure and do it more for certain patients. Our results therefore highlight how important and complex physician self-disclosure can be and suggest that male physicians adapt their self-disclosure behavior to their patients. Future research could investigate more specifically self-disclosure in different physician-patient gender dyads (i.e., female physician-male patient; male physician-female patient) as it has not been explored in this study due to the small sample size.

We also investigated the impact of physician self-disclosure on different patient outcomes. Results from Study 1 show that physicians who self-disclose more are perceived as more professionally and interpersonally competent and they have patients who trust them more. When we investigated gender differences for both of these variables, physician self-disclosure was associated with *more* trust and *more* perceived competence (professional and interpersonal) for female physicians, and *less* trust and *less* perceived competence (professional and interpersonal) for male physicians. Therefore, self-disclosure seems to have a positive effect on patients when it comes from female physicians and a rather negative effect when it comes from male physicians. This could be attributed to the role of gender stereotypes. In fact,

as mentioned previously, if we refer to the *lack of fit* model (Heilman, 1983, 1995), when female physician self-discloses, the more satisfied her patients are, because women are expected to be more interpersonally oriented and to talk more about themselves (Dindia & Allen, 1992).

By self-disclosing or opening up to their patients, men do not behave according to what is expected from them in terms of gender stereotypes. For female physicians, by behaving according to the gender stereotype, they are trusted more and perceived as more competent (professionally and interpersonally) by their patients. Study 2 could, however, not replicate these findings: there was no significant relation between physician self-disclosure and patient trust. Patient satisfaction was unaffected by physician self-disclosure in both studies. It is noteworthy that in Study 2, none of the patient outcome variables was related to physician self-disclosure.

These mixed findings, specifically on patient trust confirm what other studies in the literature show that the link between self-disclosure and patient outcomes is unclear and complicated (Anderson, Adams, & Plaut, 2008; Derlega, Metts, Petronio, & Margulis, 1993). In fact, self-disclosure depends on various factors such as the context in which it occurs, the nature of the physician–patient relationship, and the content or topic of the self-disclosure statement (Allen & Arroll, 2015). In Study 1, patients consulted their physicians for less severe conditions than patients from Study 2 (Appendix B) and this could explain the difference in the effect of self-disclosure on trust. Previous studies show that the better the health of the patient, the more they trust their physician (Croker et al., 2013). In Study 1, patients have less severe conditions meaning they might trust their physicians more easily and self-disclosure just adds to the trust they have in the physicians. In Study 2, patients have more severe conditions,

making it harder to trust their physicians, and the fact that the physician self-discloses does not make a difference.

Another explanation for these mixed results with regards to trust could be patient age. Patients in Study 1 are on average 7.47 years younger than patients in Study 2. A study on patient trust (Trachtenberg, Dugan, & Hall, 2005) identified age as important because older patients are more compliant, deferential, passive, and trusting of their physicians compared to younger patients. For the present research, this means that older patients might have already trusted their physicians more whether they self-disclosed to them or not and therefore self-disclosure did not bring any "additional" benefit for trust. This could explain why physician self-disclosure had no effect on patient trust in Study 2.

Future research might want to clarify whether the link between physician self-disclosure and patient trust depends on age and decreases in older patients or patients who know their physician well and in patients with more severe conditions.

4.2 Limitations

The results of our studies should be interpreted in light of several limitations. The generalizability of our findings is limited in numerous respects. Our data is restricted to experienced primary care physicians in the French speaking part of Switzerland and may not be generalizable to other areas of medicine or to less experienced physicians.

Self-disclosure is complex in the sense that it has different characteristics that may affect the recipient's perception of the statements such as the depth of the disclosure, which is the level of intimacy of the disclosure (*I like country music* vs. *I went through depression a few years ago*) , and the breadth, which refers to the amount of information exchanged (*1 statement in 15 min vs 5 statements in 15 min*) (Altman & Taylor, 1973). Other characteristics include:

valence, which is the extent to which the information expressed in the disclosure is positive or negative for the recipient (Chelune, Skiffington, & Williams, 1981); the perceived motivation behind the disclosure, which is how the receiver decides why the information is being shared (Derlega et al., 1993); and the appropriateness of the self-disclosure, which is the extent to which the disclosure is deemed to be acceptable within the given context (e.g., *A physician revealing he has the same condition as the patient in order to guide the patient's decision vs. A physician revealing he has marital issues, that have nothing to do with the patient's condition*) (Spitzberg Brian & Hecht Michael, 1984). The studies in this paper focused solely on breadth (amount of self-disclosure during the consultations) and did not take into account other characteristics, which could explain our mixed results. For instance, this paper did not consider whether the statements were appropriate or the patient's perception of the disclosures (appropriateness and perception depend on each patient and we did not have this information in each patient's questionnaire), which could also explain some of our results. Indeed, patients might trust a physician more if they believe the physician discloses for the patient's benefit rather than for their own benefit (e.g., a physician telling a patient that his/her parent went through the same illness and they ended up fine, which is aimed at putting the patient's mind at ease vs. a physician disclosing to a patient a mistake he/she previously made in order to ease their conscience). In fact, a study by McDaniel et al., (2007) showed that 85% of self-disclosures made by physicians did not seem to address patients' medical concerns or promote relationship-building and were considered not useful to the patient. Physicians might lose sight of their patients during the disclosure, which could lead to less patient satisfaction (Morse, McDaniel, Candib, & Beach, 2008). These aspects need to be further explored in physician-patient interactions.

Another limitation of this paper is that we have a large number of predictors in our regression analysis and a small number of participants in our studies (for example: less than 36

physicians in study 1), with clustered data. Even though we made sure we obtained the correct variances by modelling linear regressions with standard errors adjusted for clusters (the unit of analysis was the individual physician (level 2), we could not make up for the small sample size. The problem with small N is that inconclusive or contradictory results are more likely, especially given substantial variation, which means our results need to be interpreted with caution.

One last limitation that should be taken into account is the fact that physician self-disclosure and satisfaction, as well as self-disclosure and trust, both have a curvilinear relationship which could have affected our results in the sense that the line of linear regression might not be able to properly describe and predict the relationship between these variables. It might also mean that the P value cannot accurately test the null hypothesis, and the variables would appear to be un-associated.

4.3 Conclusion

Our studies shed light on physician self-disclosure during patient-physician interactions, studying aspects that had not been investigated before such as the characteristics of physicians who self-disclose, characteristics of patients as well as gender differences in physicians. We found that self-disclosure is a communication strategy often used during medical encounters. Gender differences do exist when it comes to self-disclosure in patient-physician interactions. On the one hand, male physicians who care about their patients and are interpersonally oriented use more self-disclosure. Male physicians also show more self-disclosure when faced with potentially vulnerable patients or patients they know well. On the other hand, female physicians self-disclose more than their male colleagues, but we have less understanding as to which female physicians do so and to which patients. It is possible that, contrary to male physicians, female physicians self-disclose more equally to everybody. With

respect to outcomes, trust goes in the opposite direction for female and male physician self-disclosure. This shows that considering gender when looking at self-disclosure is essential. Self-disclosure seems to increase female physicians' perceived competence and their patients' trust in them. However, for their male counterparts, self-disclosure seems to only have negative effects. Patients trust male physicians less and also perceive them as less competent if they self-disclose.

The purpose of our research was to gain insight into the different ways physicians self-disclosed during patient-physician interactions and whether there were differences in their self-disclosure patterns depending on the gender of the physician. The descriptions and insights generated from this research offer a starting point for further investigation of the ways physicians self-disclose in interactions with patients in a variety of contexts.

4.4 Practice implications

Results from our studies have important implications for the training and clinical practice of physicians. The findings will benefit patients, physicians, and the medical field as a whole considering that physician communication behavior plays an important role in the delivery of high-quality care. Our research shows that there are still many gender stereotypes linked to the medical profession and that there should be increased awareness of such stereotypes. For example, male physicians could be taught to be careful with their self-disclosure and might hold back if they want the trust of their patients. For researchers, this study will help uncover critical areas of physician self-disclosure and gender differences that have not yet been explored.

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Table 1

Physician self-disclosure statements by category (by study)

	Study 1		Study 2	
	Frequency	%	Frequency	%
Counselling	193 (98;95)	33.7 (17;16.7)	809(448;361)	34.4(19;15.4)
Casual	191(70;121)	33.4(12.2;21.2)	913(353;560)	38.8(15;23.8)
Rapport building-Empathy	73(30;43)	12.8(5.2;7.6)	204(68;136)	8.7(2.9;5.8)
Reassurance (long + short)	93(35;58)	16.3(6.1;10.2)	242(82;160)	10.3(3.5;6.8)
Rapport building-Humor	15(11;4)	2.6(1.9;0.7)	110(49;61)	4.7(2.1;2.6)
Intimacy (emotional/physical)	3(0;3)	0.5	31(18;13)	1.3(0.7;0.6)
Intimacy (relationship)	2(0;2)	0.3	14(9;5)	0.6(0.4;0.2)
Extended narrative	2(0;2)	0.3	31(11;20)	1.3(0.5;0.8)
Total	572		2354	

Note. The total number of physicians for Study 1 was 36; 20 women and 16 men. The total number of physicians for study 2 was 61; 27 women and 34 men. In parentheses are the numbers for female and male physicians respectively. % refers to the total amount of self-disclosure.

Table 2

Physician-self-disclosure statements by consultation segment (per study)

	Study 1		Study 2	
Consultation segment	Frequency	%	Frequency	%
History	336(143;193)	58.7(24.9;33.8)	1185(565;620)	50.3(24;26.3)
Counselling	135(54;81)	23.6(9.4;14.2)	692(309;383)	29.4(13.1;16.3)
Exam	42(21;21)	7.4(3.7;3.7)	278(114;164)	11.8(4.8;7)
Opening	40(23;17)	7(4;3)	145(46;99)	6.2(1.9;4.3)
Closing	19(3;16)	3.3(0.5;2.8)	54(19;35)	2.3(0.8;1.5)
Total	572		2354	

Note. The total number of physicians for Study 1 was 36; 20 women and 16 men. The total number of physicians for study 2 was 61; 27 women and 34 men. In parentheses are the numbers for female and male physicians respectively.

Table 3

Study 1: Regression of Self-Disclosure on Physician Characteristics.

	Overall		Female physicians		Male physicians	
Independent variables	*β*	*SE*	*β*	*SE*	*β*	*SE*
Physician age	0.059	0.005	0.056	0.027	0.036	0.005
Physician affiliativeness	0.374**	0.023	0.238	0.057	0.408**	0.021
Physician dominance	0.320**	0.034	0.399	0.056	0.196	0.041
Physician experience	0.369	0.006	0.388	0.029	0.288	0.007
Physician gender	0.104	0.054				
N (physicians)	62		27		35	
R2	0.164		0.194		0.162	

Note: All variables have been mean-centered to make interpretation of parameter estimates easier. * p<.05; ** p<.01; *** p<.001

Table 4

Study 2: Regression of Self-Disclosure on Physician Characteristics.

	Overall		Female physicians		Male physicians	
Independent variables	*β*	*SE*	*β*	*SE*	*β*	*SE*
Physician Emotion Recognition Accuracy	0.003	0.010	0.014	0.015	0.007	0.017
Physician empathic concern	0.131*	0.052	0.124	0.087	0.157*	0.064
Physician perspective taking	0.008	0.050	-0.031	0.098	0.001	0.057
Physician age	-0.018	0.012	-0.031*	0.012	0.007	0.014
Physician experience	0.018	0.011	0.033*	0.012	-0.007	0.013
Physician gender	0.041	0.052				
N (physicians)	58		26		32	
R2	0.076		0.199		0.064	

Note. All variables have been centered at their means, * p<.05; ** p<.01; *** p<.001

Table 5

Study 1: Regression of Patient Characteristics on Physician Self Disclosure

	Overall		Female physicians		Male physicians	
Independent variables	*β*	*SE*	*β*	*SE*	*β*	*SE*
Patient age	-0.002	0.001	-0.002	0.002	-0.002	0.002
Patient gender	0.030	0.040	0.090	0.058	-0.028	0.073
Patient sharing preference	0.012	0.043	0.106	0.063	-0.018	0.069
Patient caring preference	-0.018	0.056	-0.043	0.140	0.024	0.056
Patient perceived illness gravity	-0.013	0.029	0.025	0.056	-0.041	0.028
Patient need for further treatment	0.103*	0.049	0.020	0.070	0.167*	0.079
Patient previously visited this physician	0.017	0.021	0.058	0.037	0.002	0.029
Patient consultation frequency	0.006	0.022	-0.035	0.029	0.037	0.027
N (physicians)	35		16		19	
R2	0.204		0.244		0.187	

Note: All variables are mean-centered, * p<.05; ** p<.01; *** p<.001

Table 6

Study 2: Regression of Patient Characteristics on Physician Self-Disclosure

	Overall		Female physicians		Male physicians	
Independent variables	β	*SE*	β	*SE*	β	*SE*
Patient age	0.002	0.001	-0.001	0.002	0.003**	0.002
Patient gender	-0.035	0.032	0.033	0.056	-0.071	0.046
Patient sharing preference	-0.015	0.036	-0.016	0.055	-0.043	0.048
Patient caring preference	0.049	0.047	-0.014	0.063	0.131**	0.062
Patient perceived illness gravity	-0.007	0.023	-0.020	0.033	0.019	0.031
Patient education	0.028	0.022	0.047	0.029	0.022	0.029
Patient previously visited this physician	0.015	0.017	-0.017	0.021	0.046*	0.027
Patient consultation frequency	-0.003	0.015	0.004	0.018	-0.027	0.024
N (physicians)	61		27		34	
R2	0.031		0.054		0.130	

Note: All variables are mean-centered, * p<.05; ** p<.01; *** p<.001

Table 7

Study 1: Regression Physician Self-Disclosure on Patient Outcomes for Physicians Overall

	Satisfaction		Trust		Adherence		Competence	
Independent variables	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*
Physician self-disclosure	-0.158	0.895	0.736†	0.391	-0.606	0.590	0.979**	0.422
Physician gender X Physician SD	-0.770	0.928	-1.106**	0.504	-0.179	0.981	-1.796**	0.666
N	56		56		44		57	
R2	0.286		0.252		0.238		0.227	

Note. † $p < .10$, * p<.05; ** p<.01; *** p<.001; Competence = Perceived professional and interpersonal competence; Covariates included: patient age, patient perceived gravity of illness, patient gender, patient consultation frequency, patient preference for caring, patient preference for sharing, physician age, physician gender, physician experience; Consultation length has been controlled for.

Table 8

Study 1: Regression of Physician Self-Disclosure on Patient Outcomes by Gender (Only Results for Physician Self-Disclosure are Reported. Covariates Results were Purposefully Omitted)

	Competence				Trust			
	Female		Male		Female		Male	
Independent variable	b	SE	b	SE	b	SE	b	SE
Physician self-disclosure	1.093***	0.283	-1.694**	0.519	0.625**	0.448	-1.032*	0.397
N	32		32		18		32	
R2	0.600		0.130		0.650		0.335	

Note. * p<.1; ** p<.05; *** p<.01; Competence = Perceived professional and interpersonal competence; Covariates included: patient age, illness severity, patient gender, patient consultation frequency, patient preference for caring, patient preference for sharing, physician age, physician gender, physician experience

Table 9

Study 2: Regression of Physician Self-Disclosure on Patient Outcomes (Only Results for Physician Self-Disclosure and Interaction of Physician Gender and Physician Self-disclosure are Reported)

	Satisfaction		Trust		Enablement	
Independent variables	b	SE	b	SE	b	SE
Physician self-disclosure	0.200	0.199	0.194	0.201	0.386	0.328
Physician gender X physician self-disclosure	0.041	0.272	-0.245	0.301	-0.662	0.362
N	213		213		213	
R2	0.064		0.138		0.118	

Note. Control variables included patient age, illness severity, patient gender, patient consultation frequency, patient preference for caring, patient preference for sharing, physician age, physician gender, and physician experience

Appendix A

Types of Physician Self-disclosure

Category	**Definition**	**Examples from the videotaped consultations**
Reassurance short	A short statement that shows the physician has shared the same experience as the patient	"It does it to me too" " I agree, I am happy" "For me too its fine"
Reassurance Long	Information about the physician's personal experience	"I remember a member of my family who had things like that"
Counselling	Personal information about the physician that could guide the patient	"It's a good exercise, I personally do it sometimes" *Talking about a gilet (jacket) he suggests to his patient* "The first day I wore it, I went back to my 20s, I really felt the difference"
Rapport (Humor)	A humorous personal statement	" I could definitely do with a bit of sleep" " I drink less wine and beer than you"
Rapport (Empathy)	An expression of empathy or legitimation of the patient's experience	"I understand you, I think it is something that is embarrassing" " I understand you and I agree with you" "I think it must not be easy to live like that, from what I understand.. you live anyway"

Casual	Experience or statement from the physician that has no relevance for the patient's condition	"Yes it's a gift from a patient, I've never seen one as beautiful as that"
Intimacy (emotional/physical)	An intimate emotional of physical revelation from the physician	"I cried a lot during my divorce too"
Intimacy (relationship)	Statement indicating a desire for a personal relationship with the patient	"I like to think of my patients as my friends"
Extended narrative	A lengthy description of the physician's experience that is not relevant to the patient.	*Talking about motorbike permits:* I even managed, and it was well before retirement. I'm not there yet ... but hey, I still managed to get my wife to pass her license for a big motorbike, even though ever since she became pregnant, she never sat on a bike ever again. She never wanted anymore, but I guess it's a little bit for the same reasons as you. (*laughs*). I really like it when it rains, when it slips, when ... (*laughs*), but she does not like it at all.

Note. Examples in the table are from the videotapes used in this study

Appendix B

Patients' illness severity by Study

	Variable	N	Mean	Std. Dev.	Min	Max
Study 1	Illness severity	244	1.79	0.86	1	5
Study 2	Illness severity	66	2.62	1.19	1	5

The Effect of Physician Self-disclosure on Patient Self-disclosure and Patient Perceptions of the Physician.

Keou Kadji,

Marianne Schmid Mast

Department of Organizational Behavior, University of Lausanne, Switzerland

Author Note:

Keou Kadji, Department of Organizational Behavior, University of Lausanne, HEC

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Corresponding author at:

Keou Kadji, Department of Organizational Behavior, University of Lausanne, HEC Lausanne, Quartier Unil-Chamberonne, CH-1015 Lausanne, Switzerland, Tel: +41 78 950 04 49, E-mail: keoukambiwa.kadji@unil.ch

Abstract

Objectives: Physician self-disclosure is typically seen as patient-centered communication because it creates rapport and is seen as an expression of empathy- the capacity to understand another person's experience from within that person's frame of reference. Given that many physician behaviors affect patients differently depending on whether they are shown by a female or male physician, we set out to test whether physician self-disclosure affects patient's interaction with and perception of their physician depending on physician gender.

Method: Two hundred and forty-four participants were recruited and randomly assigned to read one of 4 vignettes as if they were the patient in the dialogue (analogue patient design). They were then asked to report how they perceived the physician and how they would react to him or her.

Results: Physicians who self-disclosed were perceived as more empathic than physicians who did not, regardless of physician and patient gender. Physician self-disclosure had an effect on the behavioral intentions of the analogue patients, and this was moderated by physician gender. Analogue patients indicated to be more willing to self-disclose to female than to male physicians who self-disclosed.

Conclusion: It is important to consider physician gender when training physicians in patient-centered communication because the same behavior can have different effects for female and male physicians.

Practical implications: Physician can use self-disclosure to express empathy. When female physicians do, they might obtain more personal information from patients, which can positively affect diagnosis and treatment.

1. The Effect of Physician Self-disclosure on Patient Self-disclosure and Patient Perceptions of the Physician.

2. Introduction

Self-disclosure is defined as the act of revealing private information about oneself as well as expressing motives, needs, wants, goals, fears, and feelings in general (Laurenceau, Barrett, & Pietromonaco, 1998). It plays a major role in developing, maintaining, and enhancing close relationships (Rimé, 2016). In the present research, we stick to a definition of self-disclosure that refers to intentional, "verbal" expressions of the self; thus we define physician self-disclosure as any statement made by a physician to a patient that describes the physician's personal experience (Roter, 1991). Physician self-disclosure as we use it does not include nonverbal cues, such as whether they express emotions in their face or how physicians dress.

Physician self-disclosure can be seen as a means to create rapport and express empathy (Zink et al., 2017) and thus it would be part of a patient-centered communication style, which builds on discussions and decisions that involve shared information, compassionate and empowering care provision, sensitivity to patient needs, and relationship building (Constand, MacDermid, Dal Bello-Haas, & Law, 2014). Empathy being described here as "the capacity to understand another person's experience from within that person's frame of reference" (Bellet & Maloney, 1991). Self-disclosure also encompasses the process of one person affecting the actions, attitudes, or feelings of another (Jannat, 2018). For example, Frank, Breyan and Elon (2000), stated that physicians can motivate their patients to adopt healthy habits through sharing their own personal healthy behaviors, which improves physicians' credibility. Therefore, as an interpersonal influence strategy, physicians' self-disclosure plays a vital role in patient-centered communication.

Self-disclosure during medical encounters has shown promising results in strengthening therapeutic relationships as it engages patients actively during medical interactions (Jannat, 2018). However, physician self-disclosure can also be seen as a violation of professional and personal boundaries (Jannat, 2018), and research is still not clear as to whether physician self-disclosure is beneficial or damaging to the patient. Some studies have demonstrated positive effects on patient outcomes (Beach et al., 2004; Holmes, Harrington, & Parrish, 2010) whilst others have demonstrated no or negative effects on patient outcomes (Candib, 1987; Malterud & Hollnagel, 2005). These inconsistencies in the literature could be due to different data collection methods such as group discussions, participant interviews, or patient visits (Allen & Arroll, 2015) or to different situational factors such as the topics of disclosure, or the gender of the discloser and the recipient of the disclosure (Hill & Stull, 1987). In fact, the effects of self-disclosure are moderated by individual differences such as gender (Lewis & McCarthy, 1988) and one of the major issues in self-disclosure theory and research is gender (Dindia & Allen, 1992). In their meta-analysis, Dindia and Allen (1992) found that, generally, women disclosed slightly more than men, but the effect size was not homogeneous across studies. They also found several moderator variables for the effect of gender on self-disclosure such as the gender of the recipient of the disclosure: female-female self-disclosure was highest, male-male self-disclosure was lowest, and opposite-gender self-disclosure was in between (Dindia & Allen, 1992).

In the health care context, it is documented that female and male physicians communicate differently with their patients (Jannat, 2018; Roter, Hall, & Aoki, 2002) and it has been shown that female physicians tend to disclose more information about themselves compared to male physicians (Hall & Roter, 2002). Whether this also concerns physician self-disclosure only starts to be investigated. We conducted research on gender differences

in physician self-disclosure (Kadji & Schmid Mast, 2019) and showed that male physicians who care about their patients and are interpersonally oriented use more self-disclosure. Male physicians also show more self-disclosure when faced with potentially vulnerable patients or patients they know well. On the other hand, female physicians self-disclose more than their male colleagues, but we have less understanding as to which female physicians do so and to which patients.

The question we ask in the current research is not whether female and male physicians differ in how much and what they self-disclose to their patients, we ask whether physician self-disclosure is perceived and reacted upon differently when it comes from a female or a male physician. In other words, when female and male physicians self-disclose in exactly the same way, will their self-disclosure still evoke different results? We test this by experimentally manipulating physician gender and the level of physician self-disclosure in an experimental design. This is the only way we can rule out that actual differences in female and male self-disclosure affect the perception and reaction of the patients. We hold constant the self-disclosure of the woman and man doctor in order to test whether the simple fact of knowing that the behavior stems from a female or a male physician, thus whether gender bias, affects the patients. Although physician self-disclosure is indicative of empathy as a facet of patient-centered communication, it is possible that, depending on physician gender, its effects on patients differ.

2.1. Gender and Self-Disclosure

The earliest research on self-disclosure found that men revealed less about themselves than women (Jourard & Lasakow, 1958) and a meta-analysis by Dindia and Allen (1992), showed that women disclosed slightly more than men. One of the most consistent findings regarding the effect of self-disclosure in interpersonal relationships is *self-disclosure*

reciprocity (Derlega & Berg, 1987), which refers to the process by which one person's self-disclosure elicits another person's self-disclose (Jourard, 1971).

Self-disclosure reciprocity has been explained by numerous theoretical models relating to human interaction, including attribution theory (Archer & Berg, 1978), social exchange theory (Derlega, Metts, & Margulis, 1993), and equity theory (Davidson, Balswick, & Halverson, 1983). Several researchers (Meuwly & Schoebi, 2017; Sprecher & Treger, 2015; Sprecher, Treger, & Wondra, 2012; Taylor & Belgrave, 1986) have shown that it is crucial for the maintenance of relationships but mostly determines how a relationship develops and evolves. It allows both members of the interaction to show their receptiveness (i.e., as listeners and disclosers) and thus balancing the communication process, i.e., there is no power relationship since both are showing vulnerability (Lopez Portillo, 2018).

Gender plays a role in self-disclosure reciprocity. Cash (1975) and Wan et al., (2009) suggest that both men and women disclose at higher rates when paired with a female recipient. However, Mulcahy (1973) found female same-gender disclosure to be greater than male same-gender disclosure whilst other studies report greater levels of self-disclosure to opposite-gender targets (Annicchiarico, 1973; Hyink, 1975).

We set out to test how self-disclosure of women and men doctors affects patients and more specifically, how self-disclosure reciprocity plays out in the context of physician-patient relationships. We expect patients to engage in more self-disclosure reciprocity to female compared to male physician who self-disclose. This is based on previous studies showing that both men and women self-disclose more to women (Dindia & Allen, 1992; Jourard & Lasakow, 1958). We therefore hypothesize the following:

H1: Patients show more self-disclosure reciprocity to female physicians who self-disclose compared to male physicians who self-disclose.

2.2.Perception and Self-Disclosure in the Physician-Patient Interaction

Derlega and Chaikin (1976) found that in the general population, women who self-disclosed were perceived as better adjusted and more likable than women who did not, and the opposite was true for men who self-disclosed. Women, that were highly disclosing were evaluated less favorably than women with medium self-disclosure when their self-disclosure was about aggressive feelings of competitiveness whilst men who were highly disclosing were evaluated less favorably than men with medium and low self-disclosure on all disclosure topics (Kleinke & Kahn, 1980). This means that depending on the gender of the discloser, all disclosure topics are not received identically by their recipient and that gender of the discloser plays a role.

These differences most likely reflect societal beliefs about how women and men should behave. They also suggest that individuals are expected to disclose information that is congruent with their gender, i.e., men should make "masculine disclosures," reflecting attitudes, behaviors, and experiences stereotypically associated with men, while women should make "feminine disclosures," reflecting attitudes, behaviors, and experiences stereotypically associated with women (Lewis & McCarthy, 1988). Thus, individuals might have different perceptions of masculine vs. feminine disclosures made by either male or female individuals.

In the health care context, female and male physicians communicate differently with their patients (Jannat, 2018; Roter et al., 2002) and existing research finding differences in the effect of female and male physician's self-disclosure might simply document gender differences in the type of self-disclosure or the way self-disclosure is conveyed. In the present research, we focus on the receiver of physician self-disclosure and test whether when female and male physicians use the same type of self-disclosure and in exactly the same way,

they are still perceived differently. This can only be tested in a controlled way by using an experimental approach. There is evidence that female physicians are perceived to be more empathic and understanding than male physicians (Cockburn & Bewley, 1996; McGurgan, O'Donovan, & Jones, 2001). Knowing that physician self-disclosure can be seen as a means to create rapport and express empathy (Zink et al., 2017), we expect that female physicians who self-disclose will be perceived as more empathic than their male counterparts. We therefore hypothesized the following:

H2: Female physicians who self-disclose are perceived as more empathic than male physicians who self-disclose.

Often, patients bring traditional gender role expectations or stereotypes to the medical encounters and respond to physicians based on these expectations (Jannat, 2018). For example, Shapiro et al., (1983) found that female patients viewed female physicians as having both instrumental (technical) and expressive (interpersonal) qualities/behaviors. On the contrary, male and female patients alike tended to view male physicians as low on both dimensions (Jannat, 2018). Eagly and Mladinic (1989) also demonstrated that, in female physicians, behaviors that convey more interpersonal orientation are linked to more patient satisfaction, which confirms gender stereotypes. However, as shown by a study by Blanch-Hartigan et al., (2010) that looked at gender bias in patients' perceptions of patient-centered behaviors, perceivers of patient-centered behaviors may think of communication skill as so intrinsic to the female role that they see the skilled female as a good woman rather than a good physician, leading to not rating them with greater competence. This would mean for this study that showing a patient-centered behavior such as self-disclosure will not lead to a more positive perception of female physicians (Blanch-Hartigan et al., 2010) as compared to male physicians. This results in the following hypothesis:

H3: Male physicians who self-disclose are perceived as more competent than female physicians who self-disclose.

A study by Weisman (Weisman & Teitelbaum, 1985) stated that studies of patient satisfaction with care received (regardless of the gender of the physician) show that a major dimension of patient satisfaction corresponds to this interpersonal aspect of medical care, also defined as the "affective quality". Assuming the interpersonal dimension is indeed a major factor determining patients' satisfaction with medical care, and assuming women physicians are perceived by patients as more likely to excel at this dimension of care (such as empathy like mentioned above), one would expect patients to prefer female to male physicians. However, it is not necessarily the case because several previous studies have shown that the quality of the medical visit can be impacted in part by patients' preexisting stereotypes and expectations (Gabbard-Alley, 1995; Roter et al., 2002).

Specific studies so far noted that despite spending more time with patients and more frequently using a patient-centered behavior, women physicians are not evaluated as highly by patients as their male colleagues (Hall, Blanch-Hartigan, & Roter, 2011; Roter et al., 2002; Schmittdiel, Grumbach, Selby, & Quesenberry, 2000). Therefore, despite female physicians being perceived more positively than male physicians, patients' outcomes will not necessarily be more positive. With physician self-disclosure considered as a patient-centered behavior (Lucy, 1995; McDaniel et al., 2007) we hypothesize the following:

H4: Male physicians who self-disclose will have patients with more positive consultation outcomes than female physicians who self-disclose.

In sum, the aim of the current study is to investigate the role of physician gender and physician self-disclosure on how participants react to the physician (i.e., self-disclosure reciprocity), patient consultation outcomes, and on how participants perceive the physician.

3. Method

3.1. Participants

Two hundred and forty-four undergraduate and graduate students from different majors from two Universities in the French speaking part of Switzerland participated in this study. Thirty-seven were excluded from the study due to failure in the manipulation check (explained in more detail below). In the end, we had a total of 207 participants (113 men and 94 women). Participants were recruited through the university subject pool. Our sample identified themselves most commonly as White (72.95%), mixed background (14.01%), Asian (4.83%), Black (3.38%) or other (4.83%). Their mean age was 21 years (range = 18-34 years). Inclusion criteria for the study were: aged above 18 years and be fluent in English. Participating in the study took on average 15 minutes and participants were remunerated the equivalent of 10 US dollars at the end of the study.

We used analogue patients, as research shows that their evaluations of communication is equivalent to clinical patients' perceptions (Van Vliet et al., 2012) and that using them is an effective and reliable means of gathering patient perception data about provider-patient interactions (Blanch-Hartigan, Hall, Krupat, & Irish, 2013).

3.2. Procedure

This study happened in a classroom that was distraction-free, where every participant was in front of a computer. Each session had between 10 and 20 participants. Thirteen sessions of data collection were necessary to complete the study; they ran over the course of one week.

Upon arrival, participants were assigned to a computer, where they gave their informed consent for the study (on screen) and were instructed to put themselves in the shoes of a patient, which is the analogue patient design. The entire study was administered on a

computer screen via Qualtrics. Participants were informed that they would read a dialogue a physician had with a patient and that we would then ask them how they perceived that physician and how this physician would affect them if they were the patient of this physician. We manipulated whether the physician in the vignette was as woman or a man and whether the physician self-disclosed or not, resulting in 4 vignettes.

At the outset of the study, participants filled in a questionnaire measuring their preference for a patient-centered physician communication style. They were then randomly assigned to read one of the 4 vignettes as if they were the patient in the dialogue. After having read the dialogue, they were asked to report their willingness to self-disclose to the physician in the vignette, satisfaction with the physician, trust in the physician, perceived physician competence, perceived physician empathy, intended treatment adherence, and willingness to return to this physician if they were the patient of this particular physician. At the end, participants had the opportunity to ask any questions they had about the study. They were thanked and paid.

3.3.Materials

Vignettes. For this study, vignette material was used to study participants' perspective on physician self-disclosure. The vignettes were written by the main researcher and validated by two senior researchers. Each vignette contained a scripted dialogue between a physician and a patient.

We manipulated the gender of the physician and the degree of physician self-disclosure, resulting in 4 different vignettes: a female physician self-disclosing, a female physician not self-disclosing, a male physician self-disclosing, and a male physician not self-disclosing. Participants were randomly assigned to one of the 4 vignettes. All four vignettes can be found in the Appendix.

Each vignette consisted of a text describing the context in which the patient consulted the physician and a transcript of how the physician communicates with the patient. Only the physician statements were in the vignette; we simply indicated when the patient spoke but not what was said by the patient. The patient's gender was not indicated. Each script with self-disclosure contained 8 instances of physician self-disclosure (e.g., *"I am personally very sensitive to stress")* and the scripts without self-disclosure were identical in content except that they did not contain self-disclosure statements (e.g., *"Many people are very sensitive to stress").*

3.4.Measures

Willingness to self-disclose. To what degree the participant indicated to be willing to self-disclose themselves was measured with four items (Ford, Millstein, Halpern-Felsher, & Irwin, 1997) on which participants indicated their degree of agreement on a 4-point Likert scale (1 = not at all, 4 = yes completely and fully). Sample items are: "*Would you be willing to discuss feelings of sadness*"; "*Would you be willing to discuss issues with sexual orientation*" and "*Would you be willing to discuss concerns about excessive alcohol use*" (*M* = 2.57, *SD* = 0.76, Cronbach's alpha = .82).

Trust in physician. Analogue patient trust was assessed with four items: "*I have full confidence in this doctor about the therapeutic decisions that concern me*.", "*I would have no fear of putting my life in the hands of this doctor*", "*This doctor only thinks about what is best for me*" and "*In the end, I have total confidence in this doctor*" previously used (Carrard, Schmid Mast, & Cousin, 2016; Cousin, Schmid Mast, & Jaunin-Stalder, 2013). Participants indicated their degree of agreement on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree; *M* = 3.26, *SD* = 0.98, Cronbach's alpha = .90).

Willingness to return to this physician. We measured how willing the participant was to return to his physician with three items from the likelihood of future visits scale (Ford et al., 1997) in which participants indicated their degree of agreement on a 5-point Likert scale (1 = definitely not, 4 = definitely yes). The items were: "*Would you want to see this doctor again if you needed a routine physical*"; "*Would you want to see this doctor again if you had a bad cough and fever*" and "*Would you want to see this doctor again if you had some very private concerns*" (*M* = 3.16, *SD* = 0.96, Cronbach's alpha = .67).

Satisfaction with physician. Analogue patient satisfaction was assessed with three items from a scale previously used in the field (Blanch-Hartigan et al., 2013; Carrard et al., 2016): "*I am totally satisfied with the consultation with this doctor*", "*Some elements of my consultation with this doctor could have been improved*" (reverse-scored item), and "*I am not completely satisfied with my consultation with this doctor*" (reverse-scored item). Participants indicated their degree of agreement on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree; *M* = 3.14, *SD* = 1.01, Cronbach's alpha = .88).

Intended treatment adherence. Analogue patient adherence was measured with three items (Cousin et al., 2013) on which participants indicated their degree of agreement on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The three items were: "*I intend to follow my treatment plans*"; "*I have no intentions of following my treatment plans*" (reverse-scored item), and "*Following my treatment plan is not in my plans*" (*M* = 2.18, *SD* = 0.98, Cronbach's alpha = .92).

Perceived physician competence. How competent the physician was perceived by the participants was assessed with the four following items: "*How competent is this doctor?*", "*How confident is this doctor?*", "*How capable is this doctor?*" and "*How skillful*

is this doctor?" (Cuddy et al., 2009). Again, participants indicated their agreement on 5-point Likert scales (1 = not at all, 5 = extremely; *M* = 3.55, *SD* = 0.73, Cronbach's alpha = .80).

Perceived physician empathy. Analogue patients' perceptions of the physician's empathic concern and understanding was measured using the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE), which is a validated scale (Kane, Gotto, Mangione, West, & Hojat, 2007) with five items on which participants indicated their degree of agreement on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Items included: "*This doctor understands my emotions, feelings and concerns*."; "*This doctor can view things from my perspective (see things as I see them)."* and "*This doctor is an understanding doctor.*" (*M* = 3.61, *SD* = 0.87, Cronbach's alpha = .86).

Patient preference for patient-centered physician communication. This was assessed using a scale that measures participants' preferences about how much they want their physician to show patient-centered communication, composed of a caring and sharing interaction style dimension (Krupat et al., 2000). The caring dimension can be defined as the extent to which participants prefer a physician to show empathy, warmth, and exploration of the patient's perspective whilst the sharing dimension measures to what extent the participants prefer the physician to share control over the consultation, to give information, and to negotiate the treatment decision (Krupat et al., 2000). Participants indicated their degree of agreement on a 5-point Likert scale (1 = do not agree at all, 5 = totally agree). Both dimensions had 9 items each. A sample item for the caring dimension is: "*A treatment cannot 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*". All items were averaged, and higher values indicate that the participant prefers a physician showing patient-centered communication, *M* = 2.55, *SD* = 0.35, Cronbach's alpha = .73.

Attention check. Participants were also asked (with two items) whether they correctly remembered how sensitive to stress the physician indicated to be[1], whether the physician suggested a CAT scan and a symptom diary for the patient's headaches[2] using a five-point scale ranging from 1 (*not at all*) to 5 (*completely*). This was asked in other to filter participants and make sure they paid attention while reading the dialogue. Participants were excluded from the study if they failed to identify that in the scenario in which the physician self-disclosed, the physician mentioned that he/she was sensitive to stress. They were also excluded if they failed to identify (in the four scenarios) that the physician suggested a CAT scan and a symptom diary to the participants.

4. Results

Statistical analyses were performed using Stata 14. We calculated separate 2 (physician gender) by 2 (physician self-disclosure: present vs. absent) by 2 (participant gender) between-subjects ANOVAS for each of the dependent variables separately. Controlling for participant preference for physician participant-centered communication and for age did not affect the results which is why they are reported without those controls.

Results for *willingness to self-disclose* showed that there was neither a significant main effect of self-disclosure, $F(1,199) = 0.00$, $p = .99$, nor of participant gender ($F(1,199) = 0.09$, $p = .76$). However, there was a significant main effect of physician gender, $F(1,199) = 5.54$, $p = .01$, showing more willingness of the participant to self-disclose when confronted with a female physician ($M = 2.67$; $SD = 0.74$) than when confronted with a male physician

[1]If participants responded *not at all* or *slightly* when the doctor mentioned that he/she was sensitive to stress and if participants responded *completely* or *considerably* when the doctor did not mention being sensitive to stress.

[2]Participants were removed when they responded *not at all* or *slightly* because in all conditions, the doctor did propose a CAT scan and a symptom diary.

(*M* =2.42 ; *SD* = 0.77). Moreover, there was a significant interaction effect between physician gender and physician self-disclosure, *F(*1,199) = 4.43, *p* = .03. Planned contrast analysis, *t*(110)= -3.07, *p* = .001, confirmed our Hypothesis 1 (Figure 1), stating that participants confronted with a female physician who self-disclosed are themselves more willing to self-disclose (self-disclosure reciprocity) *M* = 2.77; *SD* = 0.75 than participants confronted with a male physician who self-disclosed (*M* = 2.33; *SD* = 0.75). The remaining 2-way as well as the 3-way interactions were non-significant (all *F*'s < 1.1, all *p*'s > .29).

We also calculated additional contrast analyses that showed that female physicians who self-disclosed (*M* = 2.77; *SD* = 0.75) received marginally significantly more disclosure reciprocity than female physicians who do not self-disclose (*M* = 2.55; *SD* = 0.72): *t*(103) = -1.53, *p* = .06, and that male physicians who self-disclose (*M* = 2.33; *SD* = 0.75) received significantly less disclosure than male physicians who do not self-disclose (*M* = 2.52; *SD* = 0.79): *t*(100) = 1.21, *p* = .04.

Results for *perceived physician empathy*[3] showed that there was a significant main effect of self-disclosure, *F(*1,199) = 10.48, *p* = .001, showing that physicians who self-disclosed were perceived as more empathic (*M* = 3.79; *SD* = 0.84) than physicians who did not self-disclose (*M* = 3.40; *SD* = 0.86). However, there was no significant physician gender main effect, *F(*1,199) = 1.56, *p* = .21, and no significant participant gender main effect, *F(*1,199) = 1.11, *p* = .29. Moreover, all 2-way, as well as the 3-way interactions were non-

[3] We also performed this analysis by looking at individual items separately for the empathy scale compared to the total score. The results for each perceived physician empathy item showed that there was a significant main effect of self-disclosure only, showing that physicians who self-disclosed were perceived as more empathic (M = 3.79; SD = 0.84) than physicians who did not self-disclose (M = 3.40; SD = 0.86). However, there was no significant physician gender main effect and no significant participant gender main effect. Moreover, all 2-way, as well as the 3-way interactions were non-significant. This is very similar to the result we had for the total score.

significant (all F's <1.70, all p's > .41). Our results thus did not support Hypothesis 2 which stated that female physicians who self-disclose are perceived as more empathic than male physicians who self-disclose.

With regard to *perceived physician competence*, there was no significant main effect of self-disclosure, $F(1,199) = 0.39$, $p = .53$, and none for physician gender, $F(1,199) = 1.33$, $p = .25$. The effect of participant gender was also non-significant, $F(1,199) = 1.65$, $p = .20$. All 2-way, as well as the 3-way interactions were non-significant (all F's <1.61, all p's > .20). Hypothesis 3 which stated that male physicians who self-disclose are perceived as more competent than female physicians who self-disclose was not confirmed.

Results relating to participant outcomes showed that for *trust in physician* ($F(1,199) = 0.02$, $p = .90$), *willingness to return to this physician* ($F(1,199) = 1.89$, $p = .17$), *participant satisfaction* ($F(1,199) = 0.08$, $p = .77$), and *intended treatment adherence* ($F(1,199) = 0.06$, $p = .80$), there was no significant main effect of self-disclosure. There was also no main effect for physician gender (all F's < 0.62, all p's > .56) and participant gender, only trust in physician had a a marginally significant main effect of participant gender, $F(1,199) = 3.30$, $p = .07$. For the remaining variables there was no significant main effect of participant gender (all F's < 1.02, all p's > .65). all 2-way, as well as the 3-way interactions were non-significant (all F's < 1.23, all p's > .60).

In sum, Hypothesis 4 stating that male physicians who self-disclose will have participants with more positive consultation outcomes than female physicians who self-disclose was not confirmed.

5. Discussion and Conclusion

5.1. Discussion

The aim of the current study was to investigate the role of physician gender and physician self-disclosure on how analogue patients would react to the physician (i.e., self-disclosure reciprocity) and how they would perceive the physician.

As predicted (Hypothesis 1), our results showed that participants show more self-disclosure reciprocity to female physicians who self-disclose compared to male physicians who self-disclose. This confirms results in the existing literature showing that women who self-disclose receive more self-disclosure in return (Stokes, Fuehrer, & Childs, 1980). The norm of reciprocity makes people give in return if they receive something. Self-disclosure can be seen as offering personal information and the reciprocity norm puts pressure on the receiver to self-disclose in return. Now people seem to do this more easily towards women and in our case towards female physicians. When female physicians self-disclose, they behave in a way that is consistent with conventional gender-role norms, thus participants might be more willing to self-disclose with them. Previous research by Hall et al., (1994) also found that female physicians received more medical information from patients than male physicians meaning that patients felt more comfortable discussing their medical issues rather with female physicians than with male physicians.

Our results suggest that using self-disclosure might be a very good way to obtain relevant patient information for female physicians. Self-disclosure of the patient in the medical consultation is important because it helps patients reveal information they would not otherwise share (Lussier & Richard, 2007), leading to quicker and more precise diagnosis. Self-disclosure also keeps patients motivated to continue their treatment and helps the patient and the physician to develop a trusting relationship by adding credibility to the support the physician wants to offer his or /her patient (Lussier & Richard, 2007).

Male physician self-disclose has a rather negative effects on the patient in that it decreases the willingness of their participants to self-disclose. Maybe the fact that a male physician self-discloses is unexpected and clashes with conventional gender-roles. According to gender stereotypes, society expects men to be tough and they are discouraged to express their feelings publicly while women are expected to be more expressive thus they behave according to gender stereotype when expressing their emotions and feelings publicly (Tong, 2014). This could explain why male physicians' participants seem to be less willing to self-disclose with them when the physicians themselves self-disclose as compared to when they do not.

We also expected that female physicians who self-disclose are perceived as more empathic than male physicians (Hypothesis 2). Our results show that physicians who self-disclose are perceived as more empathic than physicians who do not self-disclose but there were no gender differences. The latter result is not surprising because self-disclosure has been described as a form of empathy (Levenson & Ruef, 1992) and as a way to communicate understanding to the other party one is interacting with (Yabar & Hess, 2007). We also expected that male physicians who self-disclosed would be perceived as more competent (Hypothesis 3) and would have better consultation outcomes (Hypothesis 4) than female physicians who self-disclosed. However, our results did not support these hypotheses. With respect to consultation outcomes, none of the variables measured (i.e. trust in physician, willingness to return to this physician, satisfaction with physician, intended treatment adherence and perceived physician competence) were affected by physician gender or level of self-disclosure of the physician. Therefore, similarly to the results found in our previous studies (Kadji & Schmid Mast, 2019), physician gender and physician self-disclosure had no significant effect on participants' consultation outcomes (e.g. patient satisfaction or intended treatment adherence).

Apparently, the perception of physicians who self-disclose does not differ with respect to whether the self-disclosure comes from a female or a male physician (e.g., perceived empathy and competence, and expected consultation outcomes). Maybe self-disclosure is not a dimension that patients use to infer physician's characteristics and anticipated outcomes. Why female physicians are not perceived as more empathic when they self-disclose than male physicians might be an effect of patients expecting empathy from both female and male physicians equally, meaning that for patients, self-disclosure does not activate the gender stereotypes in terms of cognition but only in terms of behavior (or behavioral intentions such as self-disclosure reciprocity). This might be due to implicit learned schemas, responding more openly to women who self-disclose than to men who self-disclose as has been demonstrated in the general population (Altman & Taylor, 1973).

5.2.Limitations and future research

One weakness of this approach is the lack of generalizability of the results as analogue patients were university students and thus fairly uniform in terms of ethnic background, age, and educational level. Our analogue patients were young, mostly Caucasian and in good health, thus not representative. More research is needed to replicate the findings in other conditions, other research methods and on more age categories. However, we would like to point out that results gained from research with analogue patients shows comparable results to studies with actual patients (Altman & Taylor, 1973).

Also, vignette studies with an experimental design might be seen as more removed from medical practice than field studies. However, the experimental setting enables the researchers to look for causal relations and it controls for differences in female and male physician's frequency and type of self-disclosure. Therefore, our results complement the ones gained from observational studies.

Self-disclosure is complex in the sense that it has different characteristics that may affect the recipient's perception of the statements such as the depth of the disclosure, which is the level of intimacy of the disclosure (*I like country music* vs. *I went through depression a few years ago*), and the breadth, which refers to the amount of information exchanged (*1 statement in 15 min vs 5 statements in 15 min*) (Altman & Taylor, 1973). For this study, we used self-disclosure statement that could be perceived as not "deep" enough, in an effort for the conversation to be relatable to most students. Some students might have perceived the illness portrayed "*headache and belly pain*" as not severe enough -especially as it was a dialogue rather than a video-and thus might have not been emotionally engaged in the consultation. In order to emotionally engaged students, future research could conduct this experiment with video vignettes rather than dialogues.

In order to be clear on the definition of self-disclosure, future studies could also ask participants to read very different statements and ask which ones they would consider to be self-disclosure. This would help harmonize the perception of self-disclosure amongst the participant's pool.

5.3.Conclusion

Our study shows that when female physicians self-disclose, this might be beneficial for the clinical relationship because it entails more self-disclosure from the part of the patient which is important for diagnosis and treatment recommendations. For male physicians, self-disclosure has a negative impact on patients.

5.4.Practice implications

Our results underscore the importance of taking into account physician gender when training physician in patient-centered communication because the same behavior stemming

from female or male physicians, although indicative of empathy as a facet of patient-centered communication, can have different effects on patients. Female physicians should use self-disclosure to obtain more information from patients whereas male physicians should avoid self-disclosure; patients seem to rather clam up when they receive self-disclosure from male physicians.

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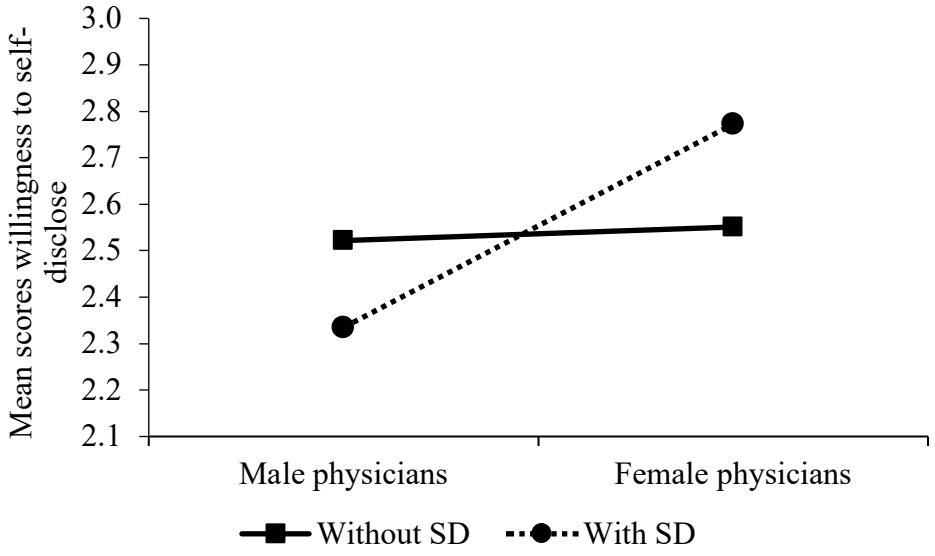
Figure 1

Participant's Willingness to Self-Disclose According to Level of Physician Self-Disclosure and Physician Gender.



Appendix A

Correlation Table for Study Variables

Variable	n	M	SD	1	2	3	4	5	6	7	8
1.PPOS	112	2.51	0.31	-							
2.Will. to SD	112	2.55	0.78	-0.07	-						
3.Trust	112	3.25	1.01	-0.09	0.25**	-					
4.Will. to return	112	3.21	0.97	0.03	0.45***	0.67***	-				
5.Satisfaction	112	3.16	1.01	0.13	-0.34***	0.75***	0.65***	-			
6.Intend. Adher.	112	2.23	1.02	-0.15	-0.26***	-0.53***	-0.51***	0.42***	-		
7.Perc. comp.	112	3.49	0.71	-0.04	0.27***	0.76***	0.66***	0.71***	-0.46***	-	
8.Perc. empathy	112	3.78	0.84	-0.01	0.28***	0.70***	0.67***	0.64***	-0.42***	0.55***	-

Note. *p < .05. **p < .01. ***p < .001. Will to SD= Willingness to self-disclose; Will. To return= Willingness to return; Inted. Adher.= Intended Adherence; Perc. Comp. = Perceived competence; Perc. Empathy= Perceived Empathy

Subordinate Perception of Supervisor Self-disclosure: A Gender Study

Keou Kadji

University of Lausanne

Abstract

The quality of the relationship between supervisors and their subordinates affects the efficiency of organizations and maintaining a good relationship between supervisors and subordinates requires specific communication strategies to be put in place. One of these strategies is supervisor self-disclosure of personal information. Research also shows that women self-disclose more than men and that communication affects subordinates differently depending on whether it stems from a female or male supervisor. We set out to test whether self-disclosure from a female or a male supervisor is perceived and reacted upon differently by subordinates. Our results suggest that neither supervisor gender nor subordinate gender affects how frequent (breadth), how intimate (depth), how positive or negative (valence), how honest, or how appropriate the supervisor's self-disclosure is perceived by their subordinates. However, while for a male supervisor, all aspects of self-disclosure were perceived more positively, for female supervisors, the picture was quite different. The more female supervisors disclosed, the more negatively they were perceived whereas more self-disclosure from male supervisors was related to them being seen in a more positive way.

Keywords: self-disclosure, supervisor-subordinate relationship, interpersonal skills

The Effect of Supervisor Self-disclosure on Subordinates' Perception of Supervisor: A Gender Study

Hierarchy remains a foundation for many modern organizations. As a result, organizational members continue to find, as Redding (1985) noted, that they are subordinate to someone in the organizational structure, with the most significant relationship being between a supervisor and his or her direct subordinates (Kassing, 2000). Supervisor-subordinate relationship has been broadly defined as the exchange of information and influence among members of an organization; one of whom has an official authority to direct and evaluate the activities of the subordinates of the organization (Jablin, 1979). It is therefore fundamental to have good quality supervisor-subordinates relationships in the workplace as they are associated with trust, respect, a willingness to share information (Blatt & Camden, 2007; Labianca, Brass, & Gray, 1998; Ragins & Button, 2007; Simons & Peterson, 2000), as well as subordinates' performance (Jehn & Shah, 1997).

A good quality supervisor-subordinate relationship can be fostered through good communication because how supervisors communicate with subordinates affects the quality of their relationship (Bakar & Mustafa, 2007), it is therefore essential to improve how supervisors communicate with their subordinates. Men and women communicate differently and listen for different information during a conversation (Borisoff & Merrill, 1985) meaning that the same behavior being exhibited by male and female supervisors, might be perceived differently by their subordinates. Thus, gender expectations may partially determine how supervisors interact with their subordinates (Shakeshaft, Nowell, & Perry, 1991).

In an effort to improve how supervisors communicate, one communication aspect that has shown positive outcomes (e.g. liking, closeness) for the receiver of the communication is self-disclosure (Sprecher, Treger, & Wondra, 2013). In fact, Sprecher et al., (2013) found that receiving disclosure leads to more liking by the recipient for the discloser than giving

disclosure and showed that although both sides of self-disclosure may be rewarding (Altman & Taylor, 1973), receiving disclosure leads to knowledge and information-based familiarity of the other, which is essential to develop long lasting relationships. In the case of subordinates, the supervisor sharing of information can lead to liking by increasing positive beliefs about the supervisor and greater perceived similarity between the subordinates and their supervisor.

The aim of this study is to test whether self-disclosure stemming from a female or a male supervisor is perceived differently by subordinates and whether the way the supervisor's self-disclosure relates to subordinate perceptions of the supervisor depends on supervisor gender. Based on the literature we would expect that female supervisors who self-disclose to their subordinates, depending on the characteristics of the disclosure will be perceived in a more negative way than male supervisors that self-disclose with the same characteristics. This is because self-disclosure is stereotypically more associated with women (Yu, 2014) but leadership is associated more with men thus women displaying a behavior that is less in line with leadership will have them be evaluated negatively (role incongruity theory discussed later in the paper).

Self-disclosure

Self-disclosure, or the disclosure of personal information, is a form of communication which allows individuals to get to know one another better (Ensari & Miller, 2002; Pettigrew & Tropp, 2006) and is commonly used to form quality relationships (Brickson & Brewer, 2001; Mannix & Neale, 2005). Several studies (Jourard, 1959; Jourard & Lasakow, 1958; Worthy, Gary, & Kahn, 1969) show that people feel closer to those who disclose personal information such as values and beliefs, leisure activities, personal concerns and fears, as well as likes and dislikes (Cozby, 1972; Ensari & Miller, 2002). Research has also argued that individuals disclose positive information about themselves at their workplace to boost their professional image in the eyes of others (Phillips, Rothbard, & Dumas, 2009).

There are five key aspects of the self-disclosure process. These include *breadth*, which refers to the amount of information exchanged (Altman & Taylor, 1973); *depth* - which refers to the intimacy level of the information conveyed by the discloser (how personal or sensitive the message is. *Valence* refers to the positive-negative dimension of the disclosure, in other words, whether the content of the disclosure is perceived by the recipient to reflect positively or negatively on the discloser (McCroskey & Richmond, 1977). *Perceived honesty* reflects the degree to which the disclosure is perceived to be the true representation of the discloser's inner self (McCroskey & Richmond, 1977). *Appropriateness* denotes the evaluation of the perceiver with respect to whether the sharing of the personal information signals the discloser's genuine interest in developing a more intimate relationship or is simply a means used by the discloser to obtain a certain outcome from the social interaction partner or reflects a maladjusted personality. Altman and Taylor (1973) suggested for example, that disclosing personal information at the earliest stages of a relationship (such as in a first encounter) may be too much, too soon. As a result, the disclosing person may be viewed as maladjusted and less likeable.

Gender of the Supervisor and Self-Disclosure

In the context of self-disclosure, Derlega and Chaikin (1976) found that women who self-disclosed were perceived as better adjusted and more likable than women who did not, and the opposite was true for men who self-disclosed. Women, that were highly disclosing were evaluated less favorably than women with medium self-disclosure when their self-disclosure was about aggressive feelings of competitiveness whilst men who were highly disclosing were evaluated less favorably than men with medium and low self-disclosure on all disclosure topics (Kleinke & Kahn, 1980). It is very relevant as one might wonder if there is a difference in the perception of a man or a woman who self-disclose and is in a leadership position. Although men still are overrepresented as supervisors/leaders in many industries, the workforce

landscape has changed greatly and women now have not only entered the workforce itself but have also gradually made an entrance into management positions (Eagly & Carli, 2003).

Research shows stereotypical beliefs about the way men and women behave and are supposed to behave exist (Glick & Fiske, 1999). In fact, according to Glisk and Fiske (1999)'s *ambivalent sexism theory*, male predominance in economic, political, and social institutions supports hostile sexism, which characterizes women as inferior and incompetent and this has been demonstrated to be important when it comes to expectations and perceptions of behavior in hierarchical relationships (Johansson & Wennblom, 2017). Drawing from previous findings, it thus seems natural that what is expected is that similar behavior in a female or male supervisor may be perceived differently by their subordinates (using self-disclosure), and that subordinate responses and perceptions of their supervisor may vary depending on the gender of supervisor.

Differences in the perception of male and female supervisor might also be explained through the gender role congruity theory, which pertains to the congruity between gender and other roles, including leadership roles (Eagly & Karau, 2002). This theory explains that leadership is more congruent with the masculine gender role (agentic) than the feminine gender role -caring or giving support, or that put emphasis on human interactions (Eagly & Karau, 2002). Considering that self-disclosure is a communication tool that is mainly attributed to women, we anticipate that there will be an incongruity between the female supervisors and their leadership role, leading to female supervisors being evaluated and perceived more negatively than their male counterparts. Therefore, we could think male supervisors might also not benefit from using self-disclosure as a communication tool (as it is more attributed to women) as there will be an incongruity between their behavior and their leadership role. In fact, a literature review by Witherspoon (1997) noted several key differences between male and female supervisors. Male supervisors tended to give more opinions, be more argumentative,

and not disclose personal information whilst women assumed more nurturing roles and were more disclosive about personal information.

However, according to the literature, male supervisors displaying stereotypically unexpected but positive behaviors such as a more "nurturing or caring" leadership/managing style could also be evaluated more positively and thus have subordinates report more positive outcomes than female supervisors displaying the same behavior that is stereotypically expected of them (Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997).

Additionaly, from the subordinate's point of view, Miller and Ivey (2006) found that subordinates reported a greater connection with male supervisors who self-disclosed than they did with female supervisors who self-disclosed. They also noted that there were no gender differences when it came to the amount of self-disclosure statements exchanged between supervisors and subordinates. Interestingly, Heru, Strong, Price, and Recupero (2004) found that male subordinates favored looser boundaries and more self-disclosure than female subordinates did. Female subordinates also favored more rigid boundaries with their supervisors, thus it is essential to also investigate the role of subordinates' gender when looking at supervisor self-disclosure. All the above suggests the relevance of explicitly taking gender roles into account in the relationship between supervisors and their subordinates especially when examining communication processes such as self-disclosure.

However, to our knowledge there are no studies that examine whether the perception of the self-disclosing supervisor by their subordinate is affected by the supervisor's gender and the subordinate's gender at the same time. The studies mentioned previously only examined the gender of either the supervisor, or the subordinate but did not look at both simultaneously. Thus, we investigate the following research question:

Is there a difference in supervisor self-disclosure (breadth, depth, valence, perceived honesty, perceived appropriateness) as experienced by the subordinates, depending on whether the supervisor is a man or a woman?

Perception of the Supervisor and the Quality of the Supervisor-Subordinate Relationship

The quality of the relationship between supervisors and subordinates is particularly important for subordinates because it is likely to affect their future growth or tenure prospects within the organization as well as how they feel about their job (Hassan & Chandaran, 2005) and their commitment to their organization. Specifically, Hamdi and Rajablu (2012) showed that low quality supervisor-subordinate relationships decrease subordinates' attachment to the firm and increase their willingness to leave the organization. On the contrary, high quality supervisor-subordinates relationships increase subordinates' feelings of attachment to the organization. Previous research also suggested that, on the one hand, subordinates who have a high-quality working relationship with their supervisors demonstrate higher levels of satisfaction and performance, and better work quality (Graen, Liden, & Hoel, 1982). On the other hand, low quality supervisor–subordinate relationships may result in simple contractual relations, higher levels of supervisory control and directives, lower levels of subordinate satisfaction, higher levels of subordinate turnover and less desired assignments (Graen et al., 1982; Liden & Graen, 1980)

As mentioned before, one of the most crucial relationships within an organization is undeniably the supervisor-subordinate one because it is the primary form of communication and the one that has fundamental implications for overall performance throughout the entire organization (Clampitt & Downs, 1993). The quality of the supervisor-subordinate relationship is crucial for subordinates as well as the organization because subordinates usually identify their immediate supervisor as their most preferred source of information about events in an

organization (Lee, 1997). Also, subordinates identify their immediate supervisor as the primary source for receiving information from top management (Bakar et al., 2007; Lee, 2001). There are also significant links between commitment to a supervisor and intention to leave the organization within the literature (Becker, 1992; Chan, Tong-qing, Redman, & Snape, 2006; Bor-Shiuan Cheng, Jiang, & Riley, 2003). Consequently, the desire to remain a member of the organization increases when attachment and loyalty to the supervisor are high. In addition to this, Clugston, Howell, and Dorfman (2000) argue that a commitment approach must take into account the subordinate's desire to maintain a lasting relationship.

Thus, one important concept for employees and organizations that will be examined in this paper is the subordinates' commitment to their supervisors. Commitment to the supervisor refers to the degree to which subordinates are "psychologically attached to their immediate supervisors, and is commonly operationalized as identification with the supervisor and internalization of the supervisor's values" (Becker, Billings, Eveleth, & Gilbert, 1996; Cheng, Jiang, Cheng, Riley, & Jen, 2015; Clugston, 2000). Commitment of subordinates to their supervisors is important because it has been found to be the most predictive of leadership effectiveness and employee performance in organizations (Chen, Tsui, & Farh, 2002; Stinglhamber & Vandenberghe, 2003). It has been shown in the literature to be closely linked to outcomes such as organizational citizenship behavior (OCB) and as previously mentioned, job performance (Siders, George, & Dharwadkar, 2001; Stinglhamber & Vandenberghe, 2003), and subordinates' counterproductive behavior (Cheng et al., 2015). One of the most important factors to elicit subordinate commitment to supervisor is supervisor perceived support, which is when their supervisors value their contribution, care about their well-being, and provide instrumental and emotional assistance (Stinglhamber & Vandenberghe, 2003; Thoits, 1985). Self-disclosure can thus come into play as greater emotional understanding has been associated with self-disclosure (Jourard, 1958).

It has also been shown that the quality of the supervisor-subordinate relationship predicts the subordinate's trust in the supervisor as well as their commitment to their supervisors (Cheng, Farh, Chang, & Hsu, 2002). Trust, which will also be investigated in this paper, is another essential factor in collaborative efforts (Costigan, Iiter, & Berman, 1998). It is recognized as a factor that ensures that employees move towards a common goal thus supervisors/managers pay particular attention to developing trust among employees (Demircan & Ceylan, 2003). Trust is also mainly associated with favorable consequences for both the employees and the organization (Altuntas & Baykal, 2010), and has been positively related to outcomes such as organizational performance (Davis, Schoorman, Mayer, & Tan, 2000) financial performance, labor productivity, and product or service quality (Brown, Gray, McHardy, & Taylor, 2015). Confidence among employees and toward managers also increased job satisfaction (Spence Laschinger, Finegan, & Shamian, 2002). Previous studies have also suggested a relationship between trust and various dimensions of self-disclosure thus it is crucial that employees have confidence primarily in their supervisors in order to be more effective.

This research builds on the importance of leader and follower relationships or here called supervisor-subordinate relationships; hence it is crucial to look at the leader member exchange theory (LMX) as it focuses on the quality of the relationship between leader and follower. Leader–member exchange (LMX) theory is a relationship-based, dyadic theory of leadership and its particularity, compared to other behavioral leadership theories, is that it does not focus on what leaders do, such as transformational, or other empowering leadership theories, but it highlights that leaders influence employees through the quality of the relationships they develop with them (Bauer & Erdogan, 2015). A high-quality relationship being characterized by trust, liking, professional respect, and loyalty (Bauer & Erdogan, 2015; Liden & Maslyn, 1998). Burns and Otte (1999) mentioned that some of the verbal tools used

to minimize social distance between a leader and a member include self-disclosure, humor, and the expression of mutual affection and support. Consequently, self-disclosure can be used as tool to develop and maintain a relationship between a supervisor and a subordinate. However, studies looking at how the gender of the supervisor and the gender of the subordinate affect the subordinate's perception of their supervisor are scarce. This paper's aim is to add value to the existing literature. We therefore investigate the following research question:

Is supervisor self-disclosure related differently to how the subordinate perceives the supervisor, depending on supervisor gender?

The aim of this study is to test whether self-disclosure stemming from a female or a male supervisor is perceived differently by subordinates and whether how supervisor self-disclosure relates to subordinate perceptions of the supervisor depends on supervisor gender. This paper will add to the existing literature by looking at the gender of both supervisors and subordinates. Ultimately, the knowledge gained from this study will help to improve the experiences of employees in the workplace, encourage organizational commitment, and improve performance.

Method

Participants

This study recruited participants through Mechanical Turk (MTurk), which is an online labor market platform where requesters post jobs and workers choose which jobs to do for pay. MTurk is used extensively by academics as a quick and relatively cheap means of collecting questionnaire data (Cunningham, Godinho, & Kushnir, 2017). Research confirms that MTurk is an efficient and reliable tool to generate responses from a sample pool (Mortensen & Hughes, 2018).

We invited participants who were over 18 years old, currently in a hierarchical relationship at work or that had been in one in the past 12 months. We restricted their geographical location to the USA and for quality purposes, only those with previous HIT approval of at least 95%. Complete data were collected from 451 participants. Of these, 171 failed data quality checks (e.g., "I do not speak a word of English") and were removed from the analyses.

We had a final sample size of 280 participants, 159 men (123 had male supervisors and 36 had female supervisors) and 121 women (53 had male supervisors and 68 had female supervisors). Participants in our sample identified themselves most commonly as Caucasian (63.93%). The other ethnicities were Black (17.86%), Hispanic (9.29%), Asian (5.36%), or mixed background (3.57%). Their mean age was 34 years (range = 18-67 years). More than 98% were currently employed and of those, more than 95% were employed full-time. They all had a working relationship of at least one year with their supervisor, whose mean age was 44 years (range = 20-75 years). In our sample, 62.5% had been working with their supervisor for more than one year and 37.5% for more than five years. Participants received a flat fee of 2 US dollars for participating. This research was approved by the university's ethics committee.

Procedure

We invited participants to complete a survey about their supervisor-subordinate relationships. We configured parameters to allow any eligible US based worker matching our criteria to participate in the study. The posted assignment was named "Survey about Supervisor-Subordinate Relationships" and carried these instructions: "The primary objective of this study is to investigate the subordinate perspective of the communication of his/her supervisor. This will aid in the development of ways in which supervisors can better connect with their subordinates".

Upon providing their informed consent, participants were invited to complete a questionnaire assessing the type of disclosure statements by supervisors, supervisor's self-disclosure breadth, depth, valence, honesty, appropriateness, perceived supervisor warmth and competence, trust in supervisor and commitment to supervisor. The measures were presented in random order. Participants were provided with the following definition of self-disclosure at the outset of the study to ensure that all participants knew what we meant by self-disclosure: Revealing personal information about oneself that would otherwise not be known, including thoughts, feelings, experiences, aspirations, goals, failures, successes, fears, and dreams, as well as one's likes, dislikes, and favorites.

At the end, demographic characteristics were collected and included the participants' and supervisors' age, gender, ethnicity, and nationality. Participants completed the task on average in 37 min.

In order to reduce common method bias, items in the questionnaire were mixed up randomly and we also increased the physical separation of items. This was to help reduce the participants' tendency to use previous answers to inform subsequent answers. We also tried to reduce ambiguity in scale items by keeping questions as simple and specific as possible.

Measures

Type of self-disclosure. We developed questions assessing how subordinates perceive the self-disclosure frequency of their supervisors. Participants (subordinates) indicated to what extent their supervisors self-disclosed in 15 different domains (e.g., partner, friends, children, love life, health status, opinions, or tastes) when interacting with them at work. Participants were instructed in the following way: "*There are differences in how much supervisors self-disclose but typically all supervisors make personal statements once in a while and some self-disclose a lot. So even if your supervisor did or does not self-disclose often, think about those*

instances where he or she did self-disclose when replying to the following questions". Participants were asked how much of their supervisor's self-disclosure fell into different domains such as "information about their health", "information about their partners" or "information about their love life". Participants indicated their degree of agreement on a 5-point Likert scale (1= Not at all; 5= A lot). We then averaged the 15 domains (M = 2.21, SD = 0.82, Cronbach's alpha = .90).

Self-disclosure breadth. Breadth refers to the amount of information exchanged (Altman & Taylor, 1973). This dimension was assessed using a scale previously used by Malik (2015) with three items: "My supervisor does not often self-disclose about her/himself", "My Supervisor often self-discloses her/his feelings", and " Only infrequently does my supervisor express her/his personal beliefs and opinions". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5= Strongly disagree). We averaged the scores for the items measuring self-disclosure breadth (M = 2.87, SD = 0.62, Cronbach's alpha = .74).

Self-disclosure depth. Depth refers to the intimacy level of the information conveyed by the discloser in other words how personal or sensitive the message is (Altman & Taylor, 1973). This dimension was assessed using the same scale as breadth, previously used by Malik (2015) with five items such as: "My supervisor intimately discloses who s/he really is, openly and fully in conversations", "I feel that my supervisor sometimes does not control her/his self-disclosure of personal or intimate things he/she shares about her/himself". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5= Strongly disagree). We averaged the scores for the items measuring self-disclosure depth (M = 2.48, SD = 0.91, Cronbach's alpha = .86).

Self-disclosure valence. Valence refers to the positive-negative dimension of the disclosure, in other words, whether the content of the disclosure is perceived by the recipient

to reflect positively or negatively on the discloser (McCroskey & Richmond, 1977). It was assessed using a scale previously used by Malik (2015) with two items: "My supervisor normally reveals "bad" feelings s/he has about her/himself" and "My supervisor often reveals more undesirable things about her/himself than desirable things". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5= Strongly disagree). We averaged the scores to obtain a measure of perceived supervisor self-disclosure valence with higher scores indicating more negative things revealed (M = 2.18, SD = 0.92, Cronbach's alpha = .72).

Self-disclosure honesty. This dimension reflects the degree to which the disclosure is perceived to be a true representation of the discloser's inner self (McCroskey & Richmond, 1977). It was also assessed using a scale previously used by Malik (2015) with six items such as: "When my supervisor discloses, s/he does so to let me know s/he trusts me", "My supervisor's statements about him/herself are used to manipulate me" (reverse scored), or "My supervisor shares information about her/himself with me to let me know we are friends". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5= Strongly disagree). We averaged the scores to obtain a measure of perceived honesty in supervisor self-disclosure (M = 3.10, SD = 0.77, Cronbach's alpha = .73).

Self-disclosure appropriateness. Self-disclosure appropriateness was assessed with a 8-item scale by Malik (2015). Sample items are: "I am comfortable during conversations when my supervisor discloses about her/himself", "My supervisor discloses things that should not be said", or "Some of the things my supervisor discloses about her/himself are in bad taste". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5= Strongly disagree). We averaged the scores to obtain a measure of perceived supervisor self-disclosure appropriateness (M = 2.64, SD = 0.57, Cronbach's alpha = .89).

Perceived supervisor warmth and competence. The two dimensions that we looked at are warmth (e.g. friendly, good-natured, sincere, and warm) and competence (e.g. capable, competent, confident, and skillful). We used a scale by Cuddy et al. (2009) with two items for warmth "How warm is your supervisor?" and "How sincere is your supervisor?", and two items for competence "How confident is your supervisor?" and "How capable is your supervisor?". Participants indicated their degree of agreement on a 5-point Likert scale (1= Not at all; 5= Extremely). We averaged the scores to obtain a measure of perceived supervisor warmth and perceived supervisor competence (M = 3.70, SD = 1.01, Cronbach's alpha = .94, for warmth and M = 3.95, SD = 0.88, Cronbach's alpha = .90, for competence).

Trust in supervisor. Trust in the supervisor was assessed with a scale previously used by Tzafir et al. (2004). It was assessed through six items that included "My supervisor is open and up front with me" and "My supervisor expresses his/her true feelings about important issues". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5=Strongly agree). We averaged the scores to obtain a measure of trust in supervisor (M = 3.61, SD = 0.72, Cronbach's alpha = .85).

Commitment to supervisor. This dimension was assessed through a scale previously used by Morin et al. (2009), with three items for commitment to supervisor: " I like the values conveyed by my immediate supervisor", " I feel privileged to work with someone like my immediate supervisor", and "When I talk to my friends about my immediate supervisor, I describe him/her as a great person to work with". Participants indicated their degree of agreement on a 5-point Likert scale (1= Strongly disagree; 5=Strongly agree). We averaged the scores to obtain a measure of subordinate commitment to their supervisor (M = 3.60, SD = 0.76, Cronbach's alpha = .89).

Positive perception of supervisor. Because perceived supervisor warmth and competence, trust in supervisor, and commitment to supervisor were all highly correlated (all r's > .69, all p's < .001), we combined them into one variable called positive perception of supervisor (M = 3.71, SD = 0.82, Cronbach's alpha = .91).

Results

Prior to performing the analyses for our main research questions, we looked at the types of self-disclosure statements that were reportedly made by supervisors. These were reported by the subordinates (Table 1). Supervisors shared more information on domains such as their life outside of work and personal problems and less information on their health or political and religious opinions.

Our first research question investigated whether there i*s a difference in supervisor self-disclosure (breadth, depth, valence, perceived honesty, perceived appropriateness) as experienced by the subordinates, depending on whether the supervisor is a man or a woman*. To investigate that, we calculated a 2 (supervisor gender) by 2 (subordinate gender) between-subjects ANOVA for each of the dependent variables (self-disclosure breadth, depth, valence, perceived honesty, and perceived appropriateness) separately, controlling for supervisor and subordinate ages. Our results showed there were no statistically significant main or interaction effects for any of the dependent variables, all F's < 1.83, all p's > .17 (Table 2).

Secondly, to test *if supervisor self-disclosure related differently to how the subordinate perceives the supervisor, depending on supervisor gender*, we further examined the correlation coefficients between positive perception (a combination of perceived supervisor warmth and competence, trust in supervisor, and commitment to supervisor) of supervisor and our supervisor self-disclosure variables for male and female supervisors separately (all controlling for subordinate gender) (Table 3). Our correlation table shows there was a significant positive

association between positive perception of the supervisor and all our self-disclosure variables all r's > .17, all p's < .05. However, conducting separate analyses for female and male supervisors shows that they differed. We tested whether the correlation coefficients were significantly different between the female and the male supervisors according to the following formula (Hedges, 1981) where N_1 corresponds to the number of male supervisors and N_2 the number of female supervisors:

$$z_{r1} - z_{r2}$$

$$\sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}$$

Results showed a significant difference (all one-tailed tests) for perceived self-disclosure breadth $z = 5.939$, $p < .001$, for perceived self-disclosure valence $z = 1.763$, $p = .03$, for perceived supervisor self-disclosure honesty $z = 2.967$, $p < .001$, and for perceived supervisor self-disclosure appropriateness $z = 3.596$, $p < .001$. The only non-significant difference was perceived self-disclosure depth $z = 1.083$, $p = .13$. This means for male supervisors, the more personal information is shared (breadth), the more intimate the self-disclosure (depth), the more negative the self-disclosure reflects on the supervisor (valence), the more honest and the more appropriate the self-disclosure of the supervisor is perceived, the more positive the supervisor is perceived by the subordinate. For female supervisors, the *less* personal information is shared (breadth) and the more honest the self-disclosure is, the more positive the supervisor is perceived by the subordinate.

Discussion

We set out to test whether self-disclosure stemming from a female or a male supervisor is perceived differently by subordinates and whether how supervisor self-disclosure

characteristics relate to subordinate perceptions of the supervisor depends on supervisor gender. Looking first at the type of self-disclosure statements subordinates reported from their supervisors, it appears as though when supervisors share personal information, this seems to mostly concern the domain of future plans, partners and personal problems. A previous study on supervisor and supervisee self-disclosure also saw supervisees report that supervisors most often self-disclosed about personal issues (Knox, Burkard, Edwards, Smith, & Schlosser, 2008). To a lesser extent, supervisors disclosed information on the domain of their social media posts, politics or religion.

For our first research question on whether there is *a difference in supervisor self-disclosure (breadth, depth, valence, perceived honesty, perceived appropriateness) as experienced by the subordinates, depending on whether the supervisor is a man or a woman.* There were no significant gender differences, meaning that the gender or the supervisor and the subordinate did not affect subordinate's positive perception of the supervisor, nor their trust in their supervisor nor their commitment to their supervisor. This echoes previous research such as one done by Trempe, Rigny, and Haccoun (1985), where they concluded that the gender of the supervisor and subordinate is less important to the perception and satisfaction of the subordinate.

For our second research question, *if supervisor self-disclosure related differently to how the subordinate perceives the supervisor, depending on supervisor gender*, our results showed that indeed, supervisor self-disclosure was related mainly to how positive subordinates evaluated their supervisors. These relations were very different for female compared to male supervisors. While for a male supervisor, all aspects of self-disclosure were perceived more positively, meaning conveying a more positive image of the supervisor, for female supervisors, the picture was quite different because the more they self-disclosed the more negatively they

were evaluated. Perceived honesty of self-disclosure was the only aspect that was positively related to how female supervisors were perceived. However, it was still significantly less so than their male counterparts. In other words, how much personal information is shared by the supervisor (breadth) has opposite effects depending whether the supervisor doing the self-disclosure is a woman or a man. It is positive for men but negative for women. As for how positive a light self-disclosure (valence) sheds on the supervisor and as how appropriate the self-disclosure is perceived, this only positively affects male supervisors and is not related to how women supervisors are perceived. In sum, when male supervisors self-disclose, it has positive effects and if female supervisors self-disclose, it has negative or no effects with the exception of when the self-disclosure is perceived as honest, then it is also positive for female supervisors.

These results echoed previous studies on the gender role congruity theory which suggests more negative outcomes for female in leadership roles since there is a mismatch between their feminine gender role and their leadership role, especially when they work in an industry that is not congruent with their gender roles (Eagly & Karau, 2002). By this, we mean that for female supervisors, self-disclosure even though stereotypically attributed to women, seems to be rather a behavior that can be considered a liability as it is seen as a "feminine trait" and leadership is still mainly associated to male agentic traits. For male supervisors however, this result was also anticipated as research previously suggested that men who show stereotypically unexpected but positive behaviors can actually be evaluated more favorably than women for whom that same behavior is stereotypically expected (Bettencourt et al., 1997). In this case, male supervisors, using self-disclosure is a behavior perceived more positively than female supervisors even though not aligned with male gender stereotypes who wants them to be tougher, stronger, more aloof, and emotionally inexpressive, while women are expected to be nurturing and expressive and self-disclose more (Yu, 2014). This result has also been

shown previously in a review on how female and male physician communication is evaluated and perceived differently by patients (Schmid Mast & Kadji, 2018). In fact, studies reviewed concluded that male physicians are given credit for using the patient-centered communication style (usually attributed to female physicians) but not female physicians (this communication style being expected from them already). Similar results were found by Hall, Roter, Blanch-Hartigan, Mast, & Pitegoff (2015) as male physicians on average got more credit for using patient-centered communication style than female physicians. These studies show that male physicians who behave in an unexpected way - because patient-centered communication would be expected less from a male than a female physician – are evaluated more positively whilst female physicians who do what is expected from them are not more positively evaluated.

Limitations and Future Research

The results reported herein should be considered in the light of some limitations. We used Mturk to conduct this research and despite several validating articles, some other research also show that its users have some fundamental differences from the general population as they are for example more educated and less religious than the general population (Goodman, Cryder, & Cheema, 2013). Knowing that self-disclosure is a very context-specific phenomenon, that is also influenced by culture, these cultural differences could have confounded our results and limit generalizability. For instance, various studies confirm that self-disclosure differ across cultural groups such as between individuals from individualistic countries in the West and collectivistic countries in Asia, with individuals from the West self-disclosing more than individuals from Asia (Chen & Danish, 2010). Considering that our participants were mainly Caucasian and American, this limits the diversity and representativeness of our sample.

Further studies should be conducted in different cultural contexts to examine whether these results are replicable. It would be interesting to be able to examine how supervisors that self-disclose are perceived by their subordinates in a communist society (China) compared to a more individualistic society (The United States of America). We would expect supervisors that self-disclose to be perceived more positively in countries like the United States of America and more negatively in countries like China, because it is more culturally accepted to self-disclose a lot in the West. Studies exploring supervisor-subordinate relationships, leaders' self-disclosure or gender differences in supervisor communication styles in African organizational contexts are also scarce.

Although we controlled for supervisor and subordinate ages, it would have been important to look at the effect of other extraneous variables such as cultural background, or socioeconomic status (income, education, religion) on how subordinates perceived their supervisor self-disclosure.

Another limitation of this study is that we only used surveys and did not conduct any behavioral observations in the participants' organizational settings. This could have provided us with reliable and valid data on supervisors and subordinates behavior. Also, our results are based on reports from the perspective of the subordinate only, but we did not collect or control for the subordinate's preference of supervisor's leadership or communication style. It would have been important to control for this variable because individuals have their own preferences for specific leadership styles, which may vary depending on the individual's experiences (Rupprecht, 2009).

Future research could look at self-disclosure from the supervisor's perspective. In fact, we just have the perspective of the subordinate and it would be interesting to look at how the supervisor perceives his or her subordinate after self-disclosing personal information to his or

her subordinates. Do they trust that subordinate more? Are they more satisfied with work-related outcomes from that subordinate? Would they be more inclined to give them more important work-related task compared to other subordinates?

Another research route would be investigating and collecting data from real-life supervisor-subordinate conversations/sessions to and code their conversations to examine the characteristics of self-disclosure statements and especially, categorize the type of self-disclosure statement made by both parties. This could be done either through behavioral observation as mentioned earlier, or time or event sampling. We could also use new technologies available to record real-life conversations between supervisors and their subordinates, to see for instance whether subordinates also self-disclose in response to their supervisor self-disclose. In fact, the reciprocity norm theory suggests that willingness to disclose personal information is positively related to the amount of disclosure input from another person, regardless of the degree of liking for the initial discloser (Derlega, Harris, & Chaikin, 1973) thus we would expect for subordinates to self-disclose more to their self-disclosing supervisors, whether they like them or not. A gender study would also be interesting to see whether the gender of both parties influence their self-disclosure.

Conclusion

Our study shows that also there was no gender differences in how subordinates perceived supervisor self-disclosure, however, supervisor self-disclosure characteristics did relate differently to subordinate perceptions of the supervisor as a function of supervisor gender. When men supervisors self-disclose, it has positive effects and if women supervisors self-disclose, it has negative or no effects with the exception of when the self-disclosure is perceived as honest, then it is also positive for female supervisors. Our results underscore the

relevance of taking gender roles into account in the relationship between supervisors and their subordinates within organization.

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Table 1

Descriptive Statistics on the Most Shared and Least Shared Information by Domains from Supervisors According to their Subordinates.

Domain	N	M	SD	Min	Max
3 most shared domains					
Their daily life and activities outside of work	280	2.81	1.29	1	5
Information about their partners	280	2.50	1.42	1	5
Information about their personal problems	280	2.44	1.31	1	5
3 least shared domains					
Personal opinions on different subjects ex: politics, religion etc..	280	1.39	0.98	1	5
Information on their posts on social media	280	1.86	1.19	1	5
Information about their health	280	2.02	1.18	1	5

Table 2

Analysis of Variance (ANOVA) Results: Supervisor Sex and Subordinate Sex Main Effects and Interaction Effect for the Different Aspects of Supervisor Self-Disclosure

	Main effect of supervisor sex		Main effect of subordinate sex		Interaction effect of supervisor and subordinate sex	
Measures	F	*p*	F	*p*	F	*p*
Type of SD	0.23	.82	0.94	.33	0.85	.35
SD breadth	0.02	.88	0.09	.75	0.31	.96
SD depth	0.03	.85	0.13	.72	0.00	.57
SD valence	0.37	.54	0.15	.70	0.01	.91
Perceived SD honesty	0.63	.42	0.01	.92	0.08	.77
Perceived SD appropriateness	0.00	.95	0.47	.49	0.89	.34

Note. SD stands for self-disclosure. All df's=1, 188. 159 male subordinates (123 had male supervisors and 36 had female supervisors) and 121 female subordinates (53 had male supervisors and 68 had female supervisors)

Table 3

Correlations between Positive Perception of Supervisor and Supervisor Self-disclosure Variables

Measures	Overall *N* =280	Male supervisor *N* = 176	Female supervisor *N* = 104
SD breadth[1]	0.24***	0.433***	-0.273**
SD depth	0.17**	0.223*	0.091
SD valence[†]	0.228***	0.305***	0.094
Perceived SD honesty[1]	0.595***	0.672***	0.416***
Perceived SD appropriateness[1]	0.167**	0.283***	-0.158

Note. * p<.05, ** p<.01, ***p<.001. [1and †]Indicate respectively a significant and a marginally significant difference in the correlation coefficient between male and female supervisors. SD stands for self-disclosure. Correlations are controlled for participant gender.

Appendix A

Correlation Table of All Variables

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	SD frequency	-													
2	SD valence	.27***	-												
3	SD depth	.06	.68***	-											
4	SD motivation	.25***	.30***	.31***	-										
5	SD appropriateness	.36***	.48***	.52***	.27	-									
6	Supervisor warmth	.16***	.21***	.20***	.51	.14*	-								
7	Supervisor competence	.30***	.17**	.1	.53***	.20***	.75***	-							
8	Trust	.24***	.19**	.13	.55***	.18**	.73***	.70***	-						
9	Commitment to supervisor	.17***	.24***	.16	.55***	.09	.80***	.71***	.70***	-					
10	Commitment to organization	.23***	.25***	.25	.62***	.23***	.56***	.59***	.61***	.62***	-				
11	Supervisor age	.13*	-.04	-.13	-.07	.03	.09	.20**	.18**	.13*	.06	-			
12	Subordinate sex	.03	.01	-.03	.02	-.03	.08	.09	.09	.08	.12*	.06	-		

13	Supervisor sex	.02	-.03	-.02	.05	-.01	.20***	.18**	.17**	.09	.11	.07	151 .34***	-	
14	Subordinate age	.07	-.1	(-.17) ***	-.03	.01	.06	.14**	.15*	.12*	.09	.45***	.13*	.1	-