

See discussions, stats, and author profiles for this publication at: <http://www.researchgate.net/publication/275521435>

The impact of gender stereotypes in patient-physician interactions

CHAPTER · OCTOBER 2015

READS

14

2 AUTHORS:



[Valérie Carrard](#)

University of Lausanne

10 PUBLICATIONS 2 CITATIONS

[SEE PROFILE](#)



[Marianne Schmid Mast](#)

University of Lausanne

92 PUBLICATIONS 1,089 CITATIONS

[SEE PROFILE](#)

Gender in patient-physician interactions

Valérie Carrard

Marianne Schmid Mast

University of Lausanne, Switzerland

In press

Correspondence about this chapter should be addressed to Valérie Carrard:

Université de Lausanne Quartier UNIL-Dorigny Bâtiment Internef

1015 Lausanne, Switzerland (e-mail: Valerie.Carrard@unil.ch).

Abstract

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

Introduction

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

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

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

female and male physicians and how the sex composition of the physician-patient dyad affects consultation outcomes. Moreover, we will analyse how gender stereotypes can affect the medical interaction and its outcomes.

The Patient-Physician Interaction

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

Table 1

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

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

- Paternalism is an interaction style in which the physician takes control over the situation. The patient is passive thus not involved in the setting of the agenda and the decision-making process and receives little information during the interaction.
- Consumerism is a setting in which patient takes control over the agenda and the medical interaction. The physician is still the one providing information, but all the decisions are taken by the patient.

- Default is an interaction style characterized by both patient and physician being low in power. None of them takes control over the agenda or the decision. The goals and role of each interaction partner remains vague.
- Mutuality is a style defined by sharing of power between the patient and the physician, characterized by egalitarianism and partnership. Patient and physician exchange information. They will build together an agenda, and negotiate the issue of the situation in order to have a shared decision-making process.

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

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

Sex in the Patient-Physician Interaction

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

enables to draw more generalizable conclusions concerning patient-physician interactions.

Physician Sex

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

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

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

Physician sex and patient behaviour. In non-clinical settings, it has been shown that people treat men and women differently in conversations. People gaze more and smile more at women, approach women more closely, and self-disclose more to women (Dindia & Allen, 1992; Hinsz & Tomhave, 1991). In the medical setting, patients behave differently when facing a female physician as compared to when facing a male physician (Hall & Roter, 2002). Patients consulting with a female physician express more positive communication such as agreement than when consulting with a male physician. Patients talk more, provide more medical information and more psychosocial information when with a female physician. This can be due to the active partnership building shown by female physicians. Patients of female physicians also show more empowered behaviour such as more interruptions and they behave in a more dominant way. In sum, when facing a female physician, patient behaviour tends to be more positive, participative, and empowered (Hall & Roter, 1998, 2002).

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

Patient Sex

Patient sex also influences the communication between physicians and patients. Female patients differ from male patients in that they have different medical problems, different

bodies, their preferences for the type of physician interaction style are different, and their behaviour in the medical encounter differs as does the behaviour of the physicians in function of the sex of the patient (Kiesler & Auerbach, 2006; Verbrugge, 1989).

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

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

Patient sex and patient satisfaction. Physicians use a more patient-centered interaction style toward female patients than toward male patients. We thus would expect female patient to be more satisfied. However, similar as in the case of the physician, there is no

significant influence of patient sex on satisfaction with the medical consultation (Hall & Dornan, 1990; Jenkinson, Coulter, Bruster, Richards, & Chandola, 2002; Mead, Bower, & Hann, 2002).

Sex Dyads

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

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

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

Female physician with female patient. The female-female dyad is characterized by more mutuality (Hall, Irish, Roter, Ehrlich, & Miller, 1994b), more patient-centeredness (Law & Britten, 1995), and more interactional synchrony (coordination of behaviours between the persons; Koss & Rosenthal, 1997). In this dyad, consultation times are longer (Franks & Bertakis, 2003) and amount of speaking time between the physician and the patient are more equal (Hall et al., 1994a). This is also the dyad in which the

physician shows more positive statements, emotional exchange, nodding, and interest cues like back-channelling (Hall et al., 1994a; Irish & Hall, 1995; van den Brink-Muinen, van Dulmen, Messerli-Rohrbach, & Bensing, 2002).

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

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

to dissatisfaction only when the physician is a women and the patient a man (Cousin, Schmid Mast, & Jaunin-Stalder, 2013). All in all, the sex dyads that are less likely to lead to patient's satisfaction are the ones with opposed sex. In absolute terms, the lowest satisfaction rate is the male patients' consulting with a younger female physician and female-female dyads are the ones which are more often related to patient satisfaction (Hall et al., 1994b).

Gender Stereotypes

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

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

better satisfaction with female physicians, but the lack of fit between what women should be like and what physicians should be like attenuates this expected link.

The lack of fit models comes also into play when looking at the way female and male physicians interact with their patients. When the female physician behaves in a male-typical way (e.g. showing less patient-centered communication), this incongruence is associated with a more negative evaluation and when the female physician behaves in a female-typical way, this is linked to more positive evaluations of her by the patients. To illustrate, people indicated to be more satisfied with a female physician when she behaved according to what is expected from her in terms of gender stereotypes (e.g. more gazing at the patient, more forward lean, softer voice) whereas satisfaction ratings for male physicians depended less on their gender-congruent behaviour (Schmid Mast, Hall, & Roter, 2008). Also, female patients were particularly satisfied with female physicians who showed a caring, thus gender role congruent interaction style, whereas in male-male interactions, the physician communication style did not affect patient satisfaction (Schmid Mast et al., 2008). The lack of fit model can also explain why female physicians do not get credit for using a more patient-centered interaction style but male physicians do (Hall, Roter, Blanch-Hartigan, Schmid Mast, & Pitegoff, 2014). It seems as if when women doctors are expected to use a more patient-centered interaction style and when they do, they simply confirm what was expected from them. If they do not, this is when they obtain less favorable evaluations. For men, when they show the non-expected patient-centered communication style, they are perceived as going out of their way to accommodate their patients by using an unexpected positive communication and then this gets noticed by patients in a positive way. To the lack of fit between the level of expected patient-centered behaviour and the level of actually shown patient-centered behaviour seems to be the driving factor for how patients evaluate their physicians. The lack of fit draws the attention to scrutinizing the physician's behaviour.

Conclusion and Outlook

Sex of the physician and sex of the patient as well as the sex composition of the physician-patient dyad affects how both physicians and patients behave during the

medical interaction and it affects the quality of the interaction and its outcomes. Not only are there differences in how female and male doctors behave and communicate with their patients, there are also differences in how female and male doctors are perceived and evaluated by their patients. Both of these aspects affect consultation outcomes.

Outlook

Many areas remain under-researched. For instance, there is a gap in the literature concerning gender differences according to different fields of medical specialization. This chapter is based on internal medicine and general practice because most of the gender studies in medical communication have been conducted in these fields. Nevertheless, the different medical specializations imply differences concerning the goal of the consultation – for example bad news delivery for oncology, or purely information provision for surgery. It would thus be interesting to see whether and how male and female physicians are evaluated differently when the consultation goals and the implications differ. Interestingly, gender segregation has labelled certain medical specializations as being more female (like pediatric) or male (like surgery; Boulis, Jacobs, & Veloski, 2001) and medical students tend to choose their specialization accordingly (van Tongeren-Alers et al., 2011). Future researches might want to focus more on the gender specificities of the different medical specializations.

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

Also, the role of the gender stereotypes is not completely clear. Some research shows that women doctors profit from adopting a feminine interaction style, others show that female doctors should avoid a masculine interaction style, and others show that women doctors

are not rewarded for using a patient-centered interaction style. Future research might want to address which conditions or which aspects of the female physician communication style exactly affect the medical consultation outcomes.

Practical Implementations

How female physicians can counteract potentially negative evaluations or profit more from using the state-of-the-art communication style is not an easy task. Although some studies show that adherence to the more female-typical communication style can be beneficial for female physicians (Schmid Mast et al., 2008), we would not like to suggest that behaving in a more female way is the way to go, especially because empirical evidence also shows that when female physicians do this by, for instance showing more patient-centeredness, they do not necessarily get credit for it (Hall et al., 2014). So one piece of advice for female doctors is to avoid male-typical behaviour, because this has a relatively consistent negative influence on how they are evaluated (Eagly & Karau, 2002). We also think that the physician stereotype will develop toward including more female-typical aspects and we then would expect less difference in the evaluation of female and male physicians. By bringing the female physician role model to greater prominence, people's stereotypes about physicians might change and include more feminine attributes (e.g. warmth, caring, empathy).

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

So physician training might want to include knowledge about gender stereotypes physicians can encounter in their daily practice and training in interpersonal sensitivity to pick up on whether their patients are particularly affected by gender stereotypes. With

more awareness of gender stereotypes, physicians would better understand their patients needs, preferences, and reaction and could react to them accordingly.

Conclusion

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

References

- Ambady, N., Koo, J., Rosenthal, R., & Winograd, C. H. (2002). Physical therapists' nonverbal communication predicts geriatric patients' health outcomes. *Psychology and aging, 17*, 443–452. doi: 10.1037/0882-7974.17.3.443
- Ambady, N., LaPlante, D., Nguyen, T., Rosenthal, R., Chaumeton, N., & Levinson, W. (2002). Surgeons' tone of voice: A clue to malpractice history. *Surgery, 132*, 5–9. doi: 10.1067/msy.2002.124733
- Arugute, M. S., & Roberts, C. A. (2000). Gender, affiliation, and control in physician–patient encounters. *Sex Roles, 42*, 107–118. doi: 10.1023/A:1007036412480
- Bensing, J., van Dulmen, S., Kallerup, H., Visser, A., Borrell, F., Finset, A., & Zimmermann, C. (2001). The European Association for Communication in Healthcare. *Patient Education and Counseling, 43*, 1–4. doi: 10.1016/S0738-3991(01)00125-2
- Berwick, D. M. (2002). A user's manual for the IOM's 'Quality Chasm' Report. *Health Affairs, 21*, 80–90. doi: 10.1377/hlthaff.21.3.80
- Boulis, A., Jacobs, J., & Veloski, J. J. (2001). Gender segregation by specialty during medical school. *Academic Medicine, 76*, 65–67. doi: 10.1097/00001888-200110001-0022
- Brody, L. R., & Hall, J. A. (2008). Gender and emotion in context. In M. Lewis, J. M. Haviland-Jones & L. Feldman Barret (Eds.), *Handbook of emotions* (pp. 395–408). New York, NY: The Guilford Press.
- Burgess, D., & Borgida, E. (1999). Who women are, who women should be: Descriptive and prescriptive gender stereotyping in sex discrimination. *Psychology, Public Policy, and Law, 5*, 665–692. doi: 10.1037/1076-8971.5.3.665
- Catalyst Research. (2013a, July 1). Pyramid: Women in S&P 500 Companies. Retrieved from <http://www.catalyst.org/knowledge/us-women-business>
- Catalyst Research. (2013b, May 21). Pyramid: Women in U.S. Healthcare. Retrieved from <http://www.catalyst.org/knowledge/women-us-healthcare>

- Cousin, G., Schmid Mast, M., & Jaunin-Stalder, N. (2013). When physician expressed uncertainty leads to patient dissatisfaction: A gender study. *Medical Education, 47*, 923–931. doi: 10.1111/medu.12237
- Derose, K. P., Hays, R. D., McCaffrey, D. F., & Baker, D. W. (2001). Does physician gender affect satisfaction of men and women visiting the emergency department? *Journal of General Internal Medicine, 16*, 218–226. doi: 10.1046/j.1525-1497.2001.016004218.x
- Dindia, K., & Allen, M. (1992). Sex differences in self-disclosure: A meta-analysis. *Psychological Bulletin, 112*, 106–124. doi: 10.1037/0033-2909.112.1.106
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review, 109*, 573–598. doi: 10.1037//0033-295x.109.3.573
- Fennema, K., Meyer, D., & Owen, N. (1990). Sex of physician: patients' preferences and stereotypes. *The Journal of Family Practice, 30*, 441–446.
- Fischer, A. H. (2000). *Gender and emotion: Social psychological perspectives*. Cambridge, UK: Cambridge University Press.
- Franks, P., & Bertakis, K. D. (2003). Physician gender, patient gender, and primary care. *Journal of Women's Health, 12*, 73–80. doi: 10.1089/154099903321154167.
- Hall, J. A., Blanch-Hartigan, D., & Roter, D. L. (2011). Patients' satisfaction with male versus female physicians: A meta-analysis. *Medical Care, 49*, 611–617. doi: 10.1097/MLR.0b013e318213c03f
- Hall, J. A., & Dornan, M. C. (1990). Patient sociodemographic characteristics as predictors of satisfaction with medical care: A meta-analysis. *Social Science & Medicine, 30*, 811–818. doi: 10.1016/0277-9536(90)90205-7
- Hall, J. A., Irish, J. T., Roter, D. L., Ehrlich, C. M., & Miller, L. H. (1994a). Gender in medical encounters: An analysis of physician and patient communication in a primary care setting. *Health Psychology, 13*, 384–392. doi: 10.1037/0278-6133.13.5.384
- Hall, J. A., Irish, J. T., Roter, D. L., Ehrlich, C. M., & Miller, L. H. (1994b). Satisfaction, gender, and communication in medical visits. *Medical Care, 32*, 1216–1231. doi: 10.1097/00005650-199412000-00005

- Hall, J. A., & Roter, D. L. (1995). Patient gender and communication with physicians: Results of a community-based study. *Women's Health, 1*, 77–95.
- Hall, J. A., & Roter, D. L. (1998). Medical communication and gender: A summary of research. *The Journal of Gender-Specific Medicine, 1*, 39–42. doi: 10.1001/jama.288.6.756.
- Hall, J. A., & Roter, D. L. (2002). Do patients talk differently to male and female physicians? A meta-analytic review. *Patient Education and Counseling, 48*, 217–224. doi: 10.1016/S0738-3991(02)00174-X
- Hall, J. A., Roter, D. L., Blanch-Hartigan, D., Schmid Mast, M., & Pitegoff, C. A. (2014). How patient-centered do female physicians need to be? Analogue patients' satisfaction with male and female physicians' identical behaviours. *Health Communication* (ahead-of-print). doi: 10.1080/10410236.2014.900892
- Heilman, M. E. (1983). Sex bias in work settings: The lack of fit model. In B. Staw & L. Cummings (Eds.), *Research in organizational behaviour* (pp. 269–298). Greenwich, CT: JAI Press.
- Heilman, M. E. (1995). Sex stereotypes and their effects in the workplace: What we know and what we don't know. *Journal of Social Behaviour and Personality, 10*, 3–26. doi: 10.1016/j.riob.2012.11.003
- Heilman, M. E. (2001). Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of social issues, 57*, 657–674. doi: 10.1111/0022-4537.00234
- Hinsz, V. B., & Tomhave, J. A. (1991). Smile and (half) the world smiles with you, frown and you frown alone. *Personality and Social Psychology Bulletin, 17*, 586–592. doi: 10.1177/0146167291175014
- Hooper, E. M., Comstock, L. M., Goodwin, J. M., & Goodwin, J. S. (1982). Patient characteristics that influence physician behaviour. *Medical Care, 20*, 630–638. doi: 10.1097/00005650-198206000-00009
- Institute of Medicine. (2001). *Improving the 21st century healthcare system. Crossing the quality chasm: A new healthcare system for the 21st century*. Washington, DC: National Academy Press.

- Irish, J. T., & Hall, J. A. (1995). Interruptive patterns in medical visits: The effects of role, status and gender. *Social Science & Medicine*, *41*, 873–881. doi: 10.1016/0277-9536(94)00399-E
- Jenkinson, C., Coulter, A., Bruster, S., Richards, N., & Chandola, T. (2002). Patients' experiences and satisfaction with health care: Results of a questionnaire study of specific aspects of care. *Quality and Safety in Health Care*, *11*, 335–339. doi: 10.1136/qhc.11.4.335
- Jolliff, L., Leadley, J., Coakley, E., & Sloane, R. A. (2012). *Women in U.S. academic medicine and science: Statistics and benchmarking report 2011–2012*. Washington, DC: Association of American Medical College.
- Kaplan, S. H., Gandek, B., Greenfield, S., Rogers, W., & Ware, J. E. (1995). Patient and visit characteristics related to physicians' participatory decision-making style: Results from the Medical Outcomes Study. *Medical Care*, *33*, 1176–1187. doi: 10.1097/00005650-199512000-00002
- Kiesler, D. J., & Auerbach, S. M. (2006). Optimal matches of patient preferences for information, decision-making and interpersonal behaviour: Evidence, models and interventions. *Patient Education and Counseling*, *61*, 319–341. doi: 10.1016/j.pec.2005.08.002
- Klößner Cronauer, C., & Schmid Mast, M. (2014). Hostile sexist male patients and female doctors – A challenging encounter. *The Patient: Patient-Centered Outcomes Research*, *7*, 37–45. doi: 10.1007/s40271-013-0025-0
- Koss, T., & Rosenthal, R. (1997). Interactional synchrony, positivity, and patient satisfaction in the physician-patient relationship. *Medical Care*, *35*, 1158–1163. doi: 10.1097/00005650-199711000-00007
- Law, S. A., & Britten, N. (1995). Factors that influence the patient centredness of a consultation. *The British Journal of General Practice*, *45*, 520-524. doi: 10.1097/00005650-199711000-00007
- Lenton, A. P., Blair, I. V., & Hastie, R. (2001). Illusions of gender: Stereotypes evoke false memories. *Journal of Experimental Social Psychology*, *37*, 3–14. doi: 10.1006/jesp.2000.1426

- Levinson, W., & Lurie, N. (2004). When most doctors are women: What lies ahead? *Annals of Internal Medicine*, *141*, 471–474. doi: 10.7326/0003-4819-141-6-200409210-00013
- Mead, N., Bower, P., & Hann, M. (2002). The impact of general practitioners' patient-centredness on patients' post-consultation satisfaction and enablement. *Social Science & Medicine*, *55*, 283–299. doi: 10.1016/S0277-9536(01)00171-X
- Renzi, C., Abeni, D., Picardi, A., Agostini, E., Melchi, C., Pasquini, P., & Braga, M. (2001). Factors associated with patient satisfaction with care among dermatological outpatients. *British Journal of Dermatology*, *145*, 617–623. doi: 10.1046/j.1365-2133.2001.04445.x
- Rhoades, D. R., McFarland, K. F., Finch, W. H., & Johnson, A. O. (2001). Speaking and interruptions during primary care office visits. *Family Medicine*, *33*, 528–532.
- Robinson, J. D. (2006). Nonverbal communication and physician–patient interaction: Review and new directions. In V. Manusov & M. L. Patterson (Eds.), *The Sage handbook of nonverbal communication* (pp. 437–459). Thousand Oaks, CA: Sage.
- Roter, D. L., & Hall, J. A. (2004). Physician gender and patient-centered communication: A critical review of empirical research. *Annual Review of Public Health*, *25*, 497–519. doi: 10.1146/annurev.publhealth.25.101802.123134
- Roter, D. L., & Hall, J. A. (2006). *Doctors talking with patients/patients talking with doctors: Improving communication in medical visits* (2 ed.). Westport, CT: Praeger
- Roter, D. L., Hall, J. A., & Aoki, Y. (2002). Physician gender effects in medical communication: A meta-analytic review. *Journal of the American Medical Association*, *288*, 756–764. doi: 10.1001/jama.288.6.756.
- Roter, D. L., Lipkin Jr., M., & Korsgaard, A. (1991). Sex differences in patients' and physicians' communication during primary care medical visits. *Medical Care*, *29*, 1083–1093. doi: 10.1097/00005650-199111000-00002
- Schmid Mast, M., Hall, J. A., & Roter, D. L. (2008). Caring and dominance affect participants' perceptions and behaviours during a virtual medical visit. *Journal of General Internal Medicine*, *23*, 523–527. doi: 10.1007/s11606-008-0512-5
- Stewart, M. (1983). Patient characteristics which are related to the doctor-patient interaction. *Family Practice*, *1*, 30–36. doi: 10.1093/fampra/1.1.30

- van den Brink-Muinen, A., van Dulmen, S., Messerli-Rohrbach, V., & Bensing, J. (2002). Do gender-dyads have different communication patterns? A comparative study in Western-European general practices. *Patient Education and Counseling*, *48*, 253–264. doi: 10.1016/S0738-3991(02)00178-7
- van Tongeren-Alers, M., van Esch, M., Verdonk, P., Johansson, E., Hamberg, K., & Lagro-Janssen, T. (2011). Are new medical students' specialty preferences gendered? Related motivational factors at a Dutch medical school. *Teaching and Learning in Medicine*, *23*, 263–268. doi: 10.1080/10401334.2011.586928
- Verbrugge, L. M. (1989). The twain meet: Empirical explanations of sex differences in health and mortality. *Journal of Health and Social Behaviour*, *30*, 282–304. doi: 10.2307/2136961
- Wallen, J., Waitzkin, H., & Stoeckle, J. (1979). Physician stereotypes about female health and illness: A study of patient's sex and the informative process during medical interviews. *Women & Health*, *4*, 135–146. doi: 10.1300/J013v04n02_03
- Wickizer, T. M., Franklin, G., Fulton-Kehoe, D., Turner, J. A., Mootz, R., & Smith-Weller, T. (2004). Patient satisfaction, treatment experience, and disability outcomes in a population-based cohort of injured workers in Washington state: Implications for quality improvement. *Health Services Research*, *39*, 727–748. doi: 10.1111/j.1475-6773.2004.00255.x
- World Health Organization. (2013). Health workforce by gender distribution by country. *Global Health Observatory Data Repository*. Retrieved from <http://apps.who.int/gho/data/node.main.A1449?lang=en>