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Original Research

Dermatologist demographics and patient satisfaction: A single-center survey study

Mio Nakamura MD [a], Naomi F. Briones MD [a], Thy Thy Do MD [a], Mick P. Couper PhD [b], Kelly B. Cha MD [a,*]

[a] Department of Dermatology, University of Michigan, Ann Arbor, MI, United States
[b] Institute for Social Research, University of Michigan, Ann Arbor, MI, United States

A B S T R A C T

Background: Patient satisfaction is a proxy for quality clinical care. Understanding the factors that drive patient satisfaction scores is important because they are publicly reported, may be used in determining hospital and physician compensation, and may allow patients to preselect physicians.
Objective: This single-center survey study of adult patients at the Michigan Medicine outpatient dermatology clinics aimed to investigate how patients respond differently to theoretical dermatologic scenarios with varying dermatologist gender.
Methods: Each questionnaire contained one of four clinical scenarios illustrating overall positive or negative encounters with a male or female dermatologist, followed by questions derived from the Press Ganey survey to assess patient satisfaction.
Results: A total of 452 completed questionnaires were collected. There were statistically significant differences in overall patient satisfaction scores between positive versus negative female and positive versus negative male dermatologists, but there were no differences in scores between positive female and positive male dermatologists or between negative female and negative male dermatologists. There were also no differences in overall scores after controlling for patient demographic characteristics or patient–dermatologist gender concordance.
Conclusion: Previous studies have suggested that male physicians receive better patient satisfaction scores compared to female physicians. However, our study found that, in response to hypothetical scenarios of positive and negative dermatology encounters, dermatologist gender did not affect any domain of patient satisfaction scores. Limitations include the use of hypothetical patient–dermatologist encounters and possible lack of generalizability because the study was conducted at one academic center in southeast Michigan with a predominantly Caucasian patient population.

Introduction

Patient satisfaction is a proxy for quality clinical care tracked by hospitals and government agencies such as the Centers for Medicare & Medicaid Services. Patient satisfaction scores are publicly reported (Centers for Medicare & Medicaid Services, 2020), which may help patients choose providers (NorCal Group, 2019). Patient satisfaction scores may also be used to determine hospital and provider compensation (Zgierska et al., 2014).

Patient satisfaction is typically measured by independent companies, such as Press Ganey, that contract with employers to distribute questionnaires to patients after clinician encounters. Numerous fixed characteristics of the patient and the encounter are known to affect patient satisfaction scores. Patient factors, such as age, race, and general health, are associated with varying satisfaction scores (McFarland et al., 2015; Morgan et al., 2015; Sitzia and Wood, 1997; Young et al., 2000). Practice setting can affect scores. For example, emergency medicine physicians who practiced at two locations, one at a busy tertiary academic center and one at a smaller community hospital, were rated differently depending on location (Cambria et al., 2019). There is also a growing appreciation of the ways in which immutable physician characteristics, such as gender and race, could affect patient satisfaction.

To date, no studies have been published on the effect of physician characteristics on patient satisfaction in dermatology. We hypothesized that dermatologist gender could significantly affect patient satisfaction scores. This study aimed to investigate the relationship between dermatologist gender and patient satisfaction in theoretical outpatient dermatology scenarios.

* Corresponding author.
    E-mail address: kellycha@med.umich.edu (K.B. Cha).

Methods

This was a single-center cross-sectional survey study of adult patients at the Michigan Medicine outpatient dermatology clinics. Questionnaires were offered to all adult patients at check-in and were completed in the waiting room prior to any encounter with the dermatologist. Each questionnaire contained one of four clinical scenarios illustrating overall positive or negative encounters with a male or female dermatologist (clinical scenarios A-D; Appendix 1). Patients randomly received one of the four scenarios. Descriptions that suggested a positive or negative encounter included whether the dermatologist was on time, had the patient's medical records, knew important information about the patient's medical history, talked to the patient about health questions and concerns, listened carefully to the patient, showed respect for what the patient had to say, explained information in a way that was easy to understand, and spent enough time with the patient. In each scenario, one of these variables was worded in the opposite way to the others. The positive scenario included one negative statement ("does not explain information in a way that is easy to understand"), and the negative scenario included one positive statement ("explains information in a way that is easy to understand"). This was done to encourage the respondent to carefully read the entire scenario before answering the questionnaires. Therefore, each scenario presented an encounter that was mostly positive or negative. The scenario was followed by questions derived from the Press Ganey survey (Presson et al., 2017) assessing patient satisfaction. Demographic data were also collected.

An analysis of variance, χ^2 tests, and logistic regression models were used to compare responses among the scenarios. Statistical significance was defined as $p < 0.05$, and all tests were two-sided. Data were analyzed using SAS, version 9.4 (SAS Institute Inc., Cary, NC). This study was exempt from review by the University of Michigan institutional review board.

Results

A total of 452 completed questionnaires were collected. Table 1 illustrates the demographic characteristics of the survey respondents, including age, gender, ethnicity, and race by clinical scenario. There were no statistically significant differences in patient demographic characteristics by scenario.

Table 2 displays the overall patient satisfaction scores by scenario. The average patient satisfaction score was 4.18 out of 10 (standard deviation [SD]: 3.43). Positive female encounters had an average score of 6.81 (SD: 2.25), and positive male encounters had an average score of 6.24 (SD: 2.53). Negative female encounters had an average score of 1.94 (SD: 2.77), and negative male encounters had an average score of 1.81 (SD: 2.49). Although there were statistically significant differences in overall patient satisfaction scores between positive versus negative female and positive versus negative male dermatologists ($p < .001$), there were no differences in scores between positive female versus positive male dermatologists ($p = .0791$) or between negative female versus negative male dermatologists ($p = .714$; Table 2). Patient gender did not influence patient satisfaction scores for any of the scenarios ($p = .2165$). There were also no differences in overall score after controlling for patient demographic characteristics. For the scenario of the positive female dermatologist, 41 patients (37%) stated they would recommend the dermatologist to family and friends. For the positive male dermatologist, 32 patients (25%) stated they would recommend the dermatologist to family and friends ($p = .2282$). For negative female and male dermatologist encounters, 97 (84%) and 100 patients (91%) stated they would not recommend the dermatologist to family and friends, respectively ($p = .1081$). Similar to overall patient satisfaction scores, with regard to whether they would recommend the dermatologist to family and friends, there was a statistically significant difference between positive versus negative female and positive versus nega-

Table 1
Demographic information of patients by scenario.

Variable	Demographic information	Overall	Positive female dermatologist	Positive male dermatologist	Negative female dermatologist	Negative male dermatologist	*p*-value
Age (years), n (%)	18–40	101 (25)	30 (29)	20 (19)	27 (26)	24 (24)	.5483
	41–60	121 (30)	33 (32)	33 (31)	29 (28)	26 (27)	
	61+	188 (46)	40 (39)	54 (50)	46 (45)	48 (49)	
Gender, n (%)	Male	174 (42)	45 (44)	54 (50)	37 (36)	38 (38)	.2051*
	Female	234 (57)	58 (56)	53 (50)	62 (61)	61 (61)	
	Other	4 (1)	0	0	3 (3)	1 (1)	
Ethnicity, n (%)	Hispanic, Latino, or Spanish	12 (3)	4 (4)	1 (1)	6 (6)	1 (1)	.1034
	Not Hispanic, Latino, or Spanish	393 (97)	98 (96)	103 (99)	95 (94)	97 (99)	
Race, n (%)	White	370 (82)	96 (86)	93 (82)	91 (79)	90 (80)	.5024
	Other	82 (18)	15 (14)	21 (18)	24 (21)	22 (20)	

* Comparison between male and female patients only.

Table 2
Overall patient satisfaction scores by scenario.

Variable		Overall	Positive female dermatologist	Positive male dermatologist	*p*-value	Negative female dermatologist	Negative male dermatologist	*p*-value
Provider rating, mean (standard deviation) [range]	0 = worst provider 10 = best provider	4.18 (3.43)	6.81 (2.25) [0–10]	6.24 (2.53) [1–10]	.0791	1.94 (2.77) [0–10]	1.81 (2.49) [0–10]	.7146
Recommend to family and friends, n (%)	Yes, definitely	90 (20)	41 (37)	32 (28)	.2282	9 (8)	8 (7)	.1081
	Yes, somewhat	116 (26)	51 (46)	54 (48)		9 (8)	2 (2)	
	No	242 (54)	18 (16)	27 (24)		97 (84)	100 (91)	

tive male dermatologists ($p < .001$), but no statistically significant difference between positive female versus positive male dermatologists ($p = .2882$) or between negative female versus negative male dermatologists ($p = .1081$) Similar results were observed when analyzing individual survey questions (Table 3).

In each scenario, the variable "explained information in a way that is easy to understand" was presented in the opposite direction from the rest of the descriptions in terms of positive or negative encounter. When analyzing this variable independently, most patients recognized that this was an inconsistent feature and scored the survey item accordingly. Therefore, there were again differences between positive versus negative female and positive versus negative male dermatologists ($p < .001$) but no difference between positive female versus male dermatologists ($p = .1801$) and negative female versus male dermatologists ($p = .8385$; Table 3).

Discussion

There is sparse literature on how physician characteristics affect patient satisfaction (Chen et al., 2017; Englehardt et al., 2019; Garcia et al., 2019; Hall et al., 2014; Ku et al., 2015; Panattoni et al., 2015; Rogo-Gupta et al., 2018; Roter et al., 2002; Sotto-Santiago et al., 2019). Although one study has shown that male physicians in a variety of settings may be given more credit for patient-centeredness compared with female physicians (Hall et al., 2014), another study has shown that female primary care physicians engage in more patient-centered communication and have longer visits than their male colleagues (Roter et al., 2002). Patient satisfaction scores in an academic setting have been reported to be lower for women and racially underrepresented physicians compared with their male and white counterparts, respectively (Chen et al., 2017). In an outpatient gynecology setting at a single institution, female physicians were less likely to be given the top rating scores compared with their male peers (Rogo-Gupta et al., 2018). A retrospective observational study of adult inpatients showed that male physicians may be rated more highly than female physicians in the arenas of "informed" and "skill," and patient satisfaction may increase as the age of the physician increases. In that study, the most striking association found was between physicians of different specialties: Obstetricians and surgeons were rated more highly across the board than medicine physicians (Roter et al., 2002). There were no dermatologists in that study.

A limited number of studies have explored patient satisfaction and physician demographics and found no significant associations. A study of patient satisfaction scores in a single multispecialty group practice found no association between gender and satisfaction scores (Engelhardt et al., 2019). Another study in a rheumatology practice also found no association between satisfaction scores and physician gender or training level (Panattoni et al., 2015).

Table 3
Scores by individual survey question and scenario.

Survey question		Overall	Positive female dermatologist	Positive male dermatologist	*p*-value	Negative female dermatologist	Negative male dermatologist	*p*-value
You saw the provider within 15 minutes of appointment time	Yes	272 (66)	103 (100)	104 (99)	1	38 (36)	27 (26)	.1303
	No	141 (34)	0 (0)	1 (1)		67 (64)	73 (72)	
		n = 413	n = 103	n = 105		n = 105	n = 92	
Provider explained things in a way that was easy to understand	Yes, definitely	190 (46)	33 (33)	26 (25)	.3523	61 (59)	70 (69)	.2664
	Yes, somewhat	41 (10)	9 (4)	3 (34)		19 (18)	15 (15)	
	No	180 (44)	64 (63)	76 (72)		24 (23)	16 (16)	
		n = 411	n = 101	n = 105		n = 104	n = 101	
Provider listened carefully	Yes, definitely	212 (52)	93 (92)	94 (90)	.6035	14 (14)	11 (11)	.1219
	Yes, somewhat	24 (6)	8 (8)	9 (9)		6 (6)	1 (1)	
	No	175 (43)	0 (0)	2 (2)		83 (81)	90 (88)	
		n = 411	n = 101	n = 105		n = 103	n = 102	
You talked to the provider about any health questions or concerns	Yes, definitely	207 (50)	85 (84)	88 (83)	1	20 (20)	14 (14)	.1788
	Yes, somewhat	51 (12)	12 (12)	13 (12)		16 (16)	10 (10)	
	No	153 (37)	4 (4)	5 (5)		66 (65)	78 (76)	
		n = 411	n = 101	n = 106		n = 102	n = 102	
Provider gave you easy to understand information about these health questions or concerns	Yes, definitely	95 (23)	26 (26)	26 (25)	.1801	21 (21)	22 (22)	.8385
	Yes, somewhat	63 (15)	10 (10)	4 (4)		23 (23)	26 (26)	
	No	250 (61)	64 (64)	76 (72)		57 (56)	53 (52)	
		n = 408	n = 100	n = 106		n = 101	n = 101	
Provider seemed to know the important information about your medical history	Yes, definitely	193 (47)	80 (80)	89 (84)	.8385	12 (12)	12 (12)	.6852
	Yes, somewhat	38 (9)	18 (18)	16 (15)		3 (3)	1 (1)	
	No	178 (44)	2 (2)	1 (1)		87 (85)	88 (87)	
		n = 409	n = 100	n = 106		n = 102	n = 101	
Provider had your medical records	Yes, definitely	219 (54)	95 (95)	100 (95)	.6334	12 (12)	12 (12)	.9995
	Yes, somewhat	19 (5)	4 (4)	5 (5)		5 (5)	5 (5)	
	No	170 (42)	1 (1)	0 (0)		85 (83)	84 (83)	
		n = 408	n = 100	n = 105		n = 102	n = 101	
Provider showed respect for what you had to say	Yes, definitely	214 (53)	93 (94)	97 (92)	.6599	14 (14)	10 (10)	.4154
	Yes, somewhat	23 (6)	6 (6)	8 (8)		6 (6)	3 (3)	
	No	169 (42)	0 (0)	0 (0)		82 (80)	87 (87)	
		n = 406	n = 99	n = 105		n = 102	n = 100	
Provider spent enough time with you	Yes, definitely	215 (53)	94 (95)	96 (92)	.4491	15 (15)	10 (10)	.2893
	Yes, somewhat	17 (4)	3 (3)	7 (7)		5 (5)	2 (2)	
	No	173 (43)	2 (2)	1 (1)		82 (80)	88 (88)	
		n = 405	n = 99	n = 104		n = 102	n = 100	

The variable "provider explained things in a way that was easy to understand" was characterized opposite to the remainder in each scenario (see Appendix for scenarios).

In the context of hypothetical scenarios of positive and negative dermatology encounters, dermatologist gender did not affect any domain of patient satisfaction scores. The findings of this study may indicate that patients do not have gender bias toward dermatologists. Alternatively, survey respondents may not have noted the gender of the dermatologist due to the subtle nature of the gender specification (pronouns), may have recognized the attempt to elicit gender bias and altered their responses accordingly, or may hold differing biases in hypothetical versus real-world encounters. Our use of pronouns to designate dermatologist gender was intended to elicit potential subconscious biases that the respondent might hold. We considered using photographs of dermatologists that reflect male or female gender; however, photographs introduce additional biases related to physical appearance, such as age, race/ethnicity, attractiveness, weight, and style of clothing. Thus, we elected to focus on pronouns only for the purpose of this exploratory study. However, the effect on patient satisfaction scores of the intersectionality of race and gender in dermatology would be especially interesting to pursue in the future.

Limitations of this study include possible lack of generalizability; the study was conducted at one academic center in southeast Michigan with a predominantly Caucasian patient population. Therefore, racial or ethnic differences in ratings could not be explored. In addition, some demographic characteristics of patients that may affect patient satisfaction scores, such as educational level and socioeconomic status, were not collected. Lastly, this study investigated the effect of dermatologist gender on patient satisfaction based only on hypothetical scenarios, which do not always faithfully elicit subconscious biases that may be revealed in a real-world setting (FeldmanHall et al., 2012; Gonzalez-Gadea et al., 2018).

Conclusion

In the context of hypothetical scenarios of positive and negative dermatology encounters, dermatologist gender did not affect any domain of patient satisfaction scores. Future studies are needed to investigate the effects of dermatologist characteristics such as gender, age, and race, and the intersectionality of these characteristics, in a real-life setting.

Conflict of Interest

None.

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NA.

Study Approval

The author(s) confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijwd.2020.05.010.

References

Cambria B, Basile J, Youssef E, Greenstein J, Chacko J, Hahn B, et al. The effect of practice settings on individual Doctor Press Ganey scores: A retrospective cohort review. Am J Emerg Med 2019;37(9):1618–21.

Centers for Medicare & Medicaid Services. HCAHPS: Patients' perspectives of care survey [Internet]. 2020 [cited 2020 January 1]. Available from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.

Chen JG, Zou B, Shuster J. Relationship between patient satisfaction and physician characteristics. J Patient Exp 2017;4(4):177–84.

Engelhardt KE, Matulewicz RS, DeLancey JO, Merkow RP, Quinn CM, Kreutzer L, et al. Physician characteristics associated with patient experience scores: Implications for adjusting public reporting of individual physician scores. BMJ Qual Saf 2019;28(5):412–5.

FeldmanHall O, Mobbs D, Evans D, Hiscox L, Navrady L, Dagleish T. What we say and what we do: The relationship between real and hypothetical moral choices. Cognition 2012;123(3):434–41.

Garcia LC, Chung S, Liao L, Altamirano J, Fassiotto M, Maldonado B, et al. Comparison of outpatient satisfaction survey scores for Asian physicians and non-Hispanic white physicians. JAMA Netw Open 2019;2(2) e190027.

Gonzalez-Gadea ML, Ibanez A, Sigman M. Schadenfreude is higher in real-life situations compared to hypothetical scenarios. PLoS One 2018;13(10) e0205595.

Hall JA, Gulbrandsen P, Dahl FA. Physician gender, physician patient-centered behavior, and patient satisfaction: a study in three practice settings within a hospital. Patient Educ Couns 2014;95(3):313–8.

Engelhardt KE, Matulewic RS, DeLancey RP, Merkow RP, Quinn CM, Kreutzer L, Bilimoria KL. Physician Characteristics Associated With Patient Experience Scores: Implications for Adjusting Public Reporting of Individual Physician Scores. BMJ Qual Saf. 2019;28(5):412–5. https://doi.org/10.1136/bmjqs-2018-008346. Epub 2018 Nov 28.

Ku JH, Danve A, Pang H, Choi D, Rosenbaum JT. Determinants of patient satisfaction in an academic rheumatology practice. J Clin Rheumatol 2015;21(5):256–62.

McFarland DC, Ornstein KA, Holcombe RF. Demographic factors and hospital size predict patient satisfaction variance–implications for hospital value-based purchasing. J Hosp Med 2015;10(8):503–9.

Morgan MW, Salzman JG, LeFevere RC, Thomas AJ, Isenberger KM. Demographic, operational, and healthcare utilization factors associated with emergency department patient satisfaction. West J Emerg Med 2015;16(4):516–26.

NorCal Group. The increasing importance of patient experience for medical practices [Internet]. 2019 [cited 2020 January 1]. Available from: https://www.norcal-group.com/library/the-increasing-importance-of-patient-experience-for-medical-practices.

Panattoni L, Stone A, Chung S, Tai-Seale M. Patients report better satisfaction with part-time primary care physicians, despite less continuity of care and access. J Gen Intern Med 2015;30(3):327–33.

Presson AP, Zhang C, Abtahi AM, Kean J, Hung M, Tyser AR. Psychometric properties of the Press Ganey® outpatient medical practice survey. Health Qual Life Outcomes 2017;15(1):32.

Rogo-Gupta LJ, Haunschild C, Altamirano J, Maldonado YA, Fassiotto M. Physician gender is associated with Press Ganey patient satisfaction scores in outpatient gynecology. Womens Health Issues 2018;28(3):281–5.

Roter DL, Hall JA, Aoki Y. Physician gender effects in medical communication: A meta-analytic review. JAMA 2002;288(6):756–64.

Sitzia J, Wood N. Patient satisfaction: A review of issues and concepts. Soc Sci Med 1997;45(12):1829–43.

Sotto-Santiago S, Slaven JE, Rohr-Kirchgraber T. (Dis)incentivizing patient satisfaction metrics: The unintended consequences of institutional bias. Health Equity 2019;3(1):13–8.

Young GJ, Meterko M, Desai KR. Patient satisfaction with hospital care: Effects of demographic and institutional characteristics. Med Care 2000;38(3):325–34.

Zgierska A, Rabago D, Miller MM. Impact of patient satisfaction ratings on physicians and clinical care. Patient Prefer Adherence 2014;8:437–46.