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Patient–Provider Relationships Among Vulnerable Patients: The Association With Health Literacy, Continuity of Care, and Self-Rated Health

Akiko Kamimura, PhD, MSW, MA[1], Rebecca Higham, BS[1], Naveen Rathi, HBS[1], Samin Panahi, BS[1], Edward Lee, BS[1], and Jeanie Ashby, MPH[2]

Abstract

While the patient–provider relationship is one factor that can improve access to primary care for underserved populations, vulnerable patients often experience challenges to have a good relationship with providers. The purpose of this study is to examine factors that affect patient–provider relationship among vulnerable patients; in particular, among uninsured primary care patients. This study focused on health literacy, continuity of care, and self-rated health as predictors of patient–provider relationship. A self-administered survey was collected from uninsured primary care patients utilizing a free clinic in the metropolitan area in the Rocky Mountain Region in the United States from May to July in 2018. Higher levels of health literacy and continuity of care are associated with a better patient–provider relationship. Better self-rated health is associated with better patient–provider relationship. Health literacy may improve by the communication and connection with a specific provider because patients better understand the care and/or medications that are being prescribed. Seeing the same provider helps patients develop a better relationship and make clinical decisions in a way that they prefer. Improving the patient–provider relationship can potentially change health outcomes positively for vulnerable patients. Informing patients that they can request a specific medical provider may allow them to increase continuity of care, and improve communication, partnering, connection, and patient centeredness, leading to an increase in health literacy and better self-rated health.

Keywords

patient–provider relationship, medically uninsured, health literacy, continuity of care, self-rated health, free clinics

Introduction

The patient–provider relationship is one factor that can improve access to primary care for underserved populations (1). Vulnerable patients often experience challenges in having a good relationship with providers. Communication is an important component of the patient–provider relationship. For example, it is possible that there are increased miscommunications between uninsured patients and providers (2). Better patient–provider relationships improve health and quality of care. The patient–provider relationship improves patients' confidence in self-management of chronic conditions (3). The quality of the patient–provider relationship is important to improve the quality of care for vulnerable patients, such as low-income patients (4). Due to the importance of the patient–provider relationship among vulnerable patients, this area of research should be further advanced to reduce health disparities.

Some of the factors that could affect the patient–provider relationship include health literacy (an individual's capability to navigate fundamental health information and services) (5), continuity of care (seeing the same provider continuously), and self-rated health. Patients with low levels of health literacy tend to experience low levels of quality of care and poor communications with providers (6). The effect of health literacy on patient–provider communication varies depending on language proficiency and types of

[1] University of Utah, Salt Lake City, UT, USA
[2] Maliheh Free Clinic, Salt Lake City, UT, USA

Corresponding Author:
Akiko Kamimura, Department of Sociology, University of Utah, 380 S 1530 E, Salt Lake City, UT 84112, USA.
Email: akiko.kamimura@utah.edu

communication (7). Because vulnerable patients tend to report low health literacy (8,9), the association between health literacy and the patient–provider relationship can be a significant factor that affects quality of care.

In addition to health literacy, continuity of care can be a significant factor in the patient–provider relationship. Higher levels of continuity of care are related to better instructions from providers among uninsured primary care patients (10). For vulnerable patients utilizing a safety-net health-care facility, such as a free clinic, it can be challenging to see the same provider every time because providers at such facilities are often volunteers (11,12).

Furthermore, self-rated health can be associated with the patient–provider relationship. For example, female patients with chronic conditions reported that a better relationship with health-care providers is related to better health (13). Vulnerable patients are more likely to report lower levels of self-rated health than patients who are not vulnerable (14–17). How vulnerable patients perceive their own health can be an important determinant on the quality of the patient–provider relationship.

The purpose of this study is to examine factors that affect patient–provider relationships among vulnerable patients; in particular, among uninsured primary care patients. This study focused on health literacy, continuity of care, and self-rated health as predictors of patient–provider relationships. This study aimed to answer the following question—"How are health literacy, continuity of care, and self-rated health associated with the patient–provider relationship?" The following hypotheses were tested: (1) Higher levels of health literacy are associated with a better patient–provider relationship; (2) Continuity of care is related to a better patient–provider relationship; and (3) Better self-rated health is associated with a better patient–provider relationship. Research on patient–provider relationships among vulnerable patients, specifically uninsured primary care patients, is an area which needs to be further enhanced. This study contributes to improving quality of care for vulnerable patients.

Methods

Setting

This project was approved by the Institutional Review Board. Data were collected at a free clinic in a metropolitan area in the Rocky Mountain Region in the United States (US) from May to July in 2018. The clinic has been providing free primary care services to uninsured individuals who live below 150% federal poverty level since 2005. The clinic is open 5 days a week and is run by 10 paid staff members and over 400 volunteers. All providers are volunteers and thus tend to have irregular schedule. The clinic is funded by donations and nongovernmental grants and serves over 6,000 patients with 15,000 patient visits a year. The majority of the patients were aged between 19 and 64 and have chronic conditions such as diabetes. Approximately half of the patients self-identify as Hispanic/Latino/Latina.

Data Collection and Participants

Data were collected in the waiting room of the clinic. All survey materials, including a survey instrument and a consent cover letter, were available in English and Spanish. A Spanish translator translated English materials into Spanish. Another translator conducted back-translation. Then, the third translator checked the accuracy of the translation. Participants were aged 18 or older and spoke English or Spanish. Sampling was based on a convenience sample. Research assistants approached all eligible patients in the waiting room. If patients expressed interest, they were handed a consent cover letter and a survey instrument. Consent was obtained from each participant. Participants received a small gift (less than US$1 value—eg, toothbrush) at the completion of the survey.

Measures

Patient–provider relationship. To measure the patient–provider relationship, there were 2 scales: (1) The health-care relationship (HCR) trust scale (18); and (2) a scale on communication and partnership with providers (19). The HCR has 15-items in total with 3 subscales: (1) interpersonal connection (5 items, eg, "My health-care provider tells me the complete truth about my health-related problems"); (2) respectful communication (4 items, eg, "My health-care provider is an excellent listener"); and (3) professional partnership (6 items, eg, "I feel comfortable talking to my health-care provider about my personal issues"). A 5-point Likert scales was used (0 = never, 4 = always). Some of the items were reverse coded. Scoring was based on a mean of items in each subscale. Higher scores indicated higher levels of trust in the communication with providers. Cronbach α values for this study population were 0.905 for interpersonal connection, 0.615 for respectful communication, and 0.657 for professional partnership.

The scale on communication and partnership with providers has 11 items (eg, "Providers are interested when I talked about my symptoms") and uses a 5-point Likert scale (5 = strongly agree, 1 = strongly disagree). Scoring was based on a mean. Higher scores indicate better communications. Cronbach α value for this study group was 0.966.

Health literacy. General health literacy was measured by the Chew's health literacy scale (20) that consists of 16 items with a 5-point Likert scale (always = 1, never = 5; or extremely = 1, not at all = 5). Examples of the items are "How often are hospital or clinic signs difficult to understand?" and "How often are directions on medication bottles difficult to understand?" Some items were reverse coded. Scoring was based on a mean of all items. Higher scores

Table 1. Sociodemographic Characteristics of Participants and Descriptive Statistics.[a,b]

	Total (N = 489)	US-Born, English Speakers, (n = 120)	Non-US-Born, English Speakers, (n = 122)	Spanish Speakers, (n = 247)	*P* Value	
Frequency (%)						
Female	323 (66.1)	77 (64.2)	70 (57.4)	176 (71.3)	<.05	
Race/Ethnicity						
White—Non-Hispanic	95 (19.4)	85 (70.8)	9 (7.4)	1 (0.4)	–	
Hispanic/Latino/Latina	322 (65.8)	22 (18.3)	59 (48.4)	241 (97.6)	<.01	
Asian or Pacific Islander	43 (8.8)	5 (4.2)	36 (29.5)	2 (0.8)	–	
Some college or higher	192 (39.3)	64 (53.3)	54 (44.3)	74 (30.0)	<.01	
Currently employed	245 (50.1)	52 (43.3)	57 (46.7)	136 (55.1)	N.S.	
Currently married	208 (42.5)	17 (14.2)	70 (57.4)	121 (49.0)	<.01	
US born	123 (25.2)	120 (100)	0 (0)	3 (1.2)	–	
Patient of the clinic—2 years or longer	269 (55.0)	51 (42.5)	74 (60.7)	144 (58.3)	<.01	
Mean (SD)						*F*
Age	48.69 (13.38)	46.22 (13.64)	49.15 (14.70)	49.74 (12.34)	NS	2.92
Self-rated general health	3.10 (1.11)	3.30 (1.04)	2.97 (1.19)	3.06 (1.09)	NS	2.99

Abbreviations: ANOVA, analysis of variance; NS, not significant; SD, standard deviation.
[a]No. (%) or mean (SD).
[b]Value of *P* denotes significance from Pearson's χ^2 tests between categorical variables (for cell size $\geq$5 only), and ANOVA tests for continuous variables comparing US-born English speakers, non-US-born English speakers, and Spanish speakers.

indicate higher levels of health literacy. Cronbach α value was 0.868.

In addition, difficulties about forms (paperwork) were measured using an original scale which consists of 3 items: (1) "The instructions to fill the forms were not clear;" (2) "The forms were difficult to fill;" and (3) "It took much time to fill the forms." A 5-point Likert scale (strongly agree = 5, strongly disagree = 1) was used. Scoring was based on a mean of the 16 items. Higher scores indicate higher levels of difficulties in forms. Cronbach α value was 0.802.

Continuity of care. To obtain the information about continuity of care, the following 4 questions were asked: (1) "Do you have a primary care medical provider at the clinic, and if so, how often do you see your primary care medical provider?;" (2) "Do you know the name of your primary care medical provider?;" (3) "Would you prefer to see the same medical provider each time that you come to the clinic?;" and (4) "Do you know you can request to see a specific primary care provider at the clinic?"

Self-rated health. Self-rated health was measured using a question "In general, would you say your health is . . . " (1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor).

Sociodemographic characteristics and technology use of participants. Participants were asked the following demographic questions: age, gender, race/ethnicity, educational attainment, employment status, marital status, nativity, country of birth, whether they have been a patient of the clinic for 2 years or longer, years in the United States (non-US-born participants only). In addition, participants were asked regarding the use of a phone, a computer, Internet, e-mails, messaging apps, social media, and text messages. Information about immigration status was not collected.

Data Analysis

Data were analyzed using statistical software IBM SPSS version 25. Descriptive statistics (frequencies and percentages for categorical variables, and mean and standard deviation [SD] for continuous variables) were performed to illustrate the characteristics of the participants and variables. Multiple regression analyses were conducted to determine association between the patient–provider relationship and health literacy, continuity of care (seeing the same provider most of the time), self-rated health, sociodemographic characteristics, and technology use. Multicollinearity was tested using the variance inflation factor. There was no significant multicollinearity among variables.

Results

Table 1 describes the characteristics of 489 participants (US-born English speakers n = 120; non-US-born English speakers n = 122; Spanish speakers n = 247). Sixty-six percent of the participants were female (n = 323, 66.1%). Spanish speakers had a significantly higher percentage of female participants (71.3%) than US-born English speakers (64.2%) and non-US-born English speakers (57.4%; $P < .05$). More than 60% of the participants reported that they were Hispanic/Latino/Latina (n = 322, 65.8%). Approximately 40% of the participants have some college or higher educational attainment (n = 192, 39.3%). United States born–English speakers had the highest percentage of

Table 2. Descriptive Statistics Regarding Patient Perspectives of Providers.[a,b]

	Total (N = 489)	US-Born English, Speakers (n = 120)	Non-US-Born, English Speakers (n = 122)	Spanish Speakers (n = 247)	*P* Value	
Frequency (%)						
Provider						
See the same provider most of the time	170 (34.8)	49 (40.8)	41 (33.6)	80 (32.4)	NS	
Know the name of your primary care medical provider	149 (30.5)	48 (40.0)	38 (31.1)	63 (25.5)	<.05	
Prefer to see the same medical provider each time	396 (80.1)	94 (78.3)	91 (74.6)	211 (85.4)	<.05	
Know you can request to see a specific primary care provider	165 (33.7%)	45 (37.5)	48 (39.3)	72 (29.1)	NS	
Phone/Computer/Internet use						
Have a current phone number	455 (93.0)	116 (96.7)	117 (95.9)	222 (89.9)	<.05	
Change phone number more than once last year	49 (10.0)	15 (12.5)	13 (10.7)	21 (8.5)	NS	
Own a cell phone	445 (91.0)	113 (94.2)	105 (86.1)	227 (91.9)	NS	
Own a smart phone	394 (80.6)	105 (87.5)	88 (72.1)	201 (81.4)	<.01	
Send or receive text message at least once a week	410 (83.8)	106 (88.3)	97 (79.5)	207 (83.8)	NS	
Use a computer	215 (44.0)	76 (63.3)	67 (54.9)	72 (29.1)	<.01	
Have an e-mail address	367 (75.1)	108 (90.0)	99 (81.1)	160 (64.8)		
Send or receive e-mail at least once a week	292 (59.7)	90 (75.0)	82 (67.2)	120 (48.6)	<.01	
Use messaging app at least once a week	288 (58.9)	69 (57.5)	70 (57.4)	149 (60.3)	NS	
Use social media at least once a week	335 (68.5)	80 (66.7)	89 (73.0)	166 (67.2)	NS	
Have missed an appointment because . . .						
you did not receive an appointment reminder	86 (17.6)	15 (12.5)	28 (23.0)	43 (17.4)	NS	
you misunderstood or forgot the appointment date/time	140 (28.6)	37 (30.8)	35 (28.7)	68 (27.5)	NS	
The best way for the clinic to reach you (multiple answers—top 3)						
Text message	371 (75.9)	96 (80.0)	88 (72.1)	187 (75.7)	NS	
Cell phone call	337 (68.9)	94 (78.3)	83 (68.0)	160 (64.8)	<.05	
E-mail	114 (23.3)	39 (32.5)	22 (18.0)	53 (21.5)	<.05	
Mean (SD)						*F*
Difficulties in forms	2.76 (1.19)	2.02 (0.95)	2.30 (1.03)	3.59 (0.89)	<.01	103.93
Trust in health-care relationship						
Interpersonal connection	3.51 (0.77)	3.54 (0.78)	3.42 (0.90)	3.55 (0.70)	NS	1.02
Respectful communication	3.30 (0.74)	3.46 (0.73)	3.28 (0.72)	3.22 (0.75)	<.05	4.03
Professional partnering	3.15 (0.74)	3.23 (0.78)	3.06 (0.77)	3.15 (0.70)	NS	1.48
Health literacy	4.25 (0.66)	4.44 (0.58)	4.19 (0.72)	4.18 (0.63)	<.01	5.69
Communication and partnership	4.40 (0.73)	4.27 (0.89)	4.35 (0.74)	4.51 (0.58)	<.05	3.95

Abbreviations: ANOVA, analysis of variance; NS, not significant; SD, standard deviation.
[a]No. (%) or mean (SD).
[b]Value of *P* value denotes significance from Pearson's χ^2 tests between categorical variables (for cell size $\geq$5 only), and ANOVA tests for continuous variables comparing US-born English speakers, non-US-born English speakers, and Spanish speakers.

having some college or higher educational attainment (53.3%) followed by non-US-born English speakers (44.3%) and Spanish speakers (30%; $P < .01$). Half of the participants had a full or part time job (n = 245, 50.1%). Slightly more than 40% of the participants were married (n = 208, 42.5%). United States born–English speakers had a significantly lower percentage of being married (14.2%) compared to non-US-born English speakers (57.4%) and Spanish speakers (49%; $P < .01$). One-quarter of the participants were US born (n = 123, 25.2%). Participants were from 43 countries including those in Americas, Europe, Asia, and Africa. The most common country of origin was Mexico (n = 166) followed by Venezuela (n = 31) and Peru (n = 20). Over half of the participants had been patients of the clinic for 2 years or longer (n = 269, 55%). United States born–English speakers had a significantly lower percentage of being patients of the clinic for 2 years or longer (42.5%) than non-US-born English speakers (60.7%) and Spanish speakers (58.3%; $P < .01$). The average age of the participants was 48.69 (SD = 13.38). On average, non-US-born participants had lived in the United States for 15.02 (SD = 9.98) years. There was no significant difference in self-rated general health among the 3 groups.

Table 2 presents descriptive results of perceptions of providers, phone/computer/Internet use, reasons of missing for an appointment, levels of difficulties in forms, trust in HCR, health literacy, and communication and partnership with providers. While 80% of the participants preferred to see the same medical provider each time (n = 396, 80.1%), only one-third of the participants saw the same provider most of

Table 3. Predictors of Patient–Provider Relationship.[a]

	Interpersonal,[b] β	*P* Value	Respectful,[b] β	*P* Value	Professional,[b] β	*P* Value	Centeredness,[b] β	*P* Value
Age	0.004	NS	0.004	NS	0.01	<.01	0.001	NS
Female	0.004	NS	0.88	NS	0.01	NS	0.27	NS
US-born English speakers[c]	−0.03	NS	0.20	NS	0.01	NS	−0.16	NS
Non-US-born English speakers[c]	−0.02	NS	0.16	NS	−0.07	NS	−0.06	NS
Some college or higher	−0.19	<.05	−0.12	NS	−0.01	NS	−0.12	NS
Employed	−0.23	<.01	−0.11	NS	−0.17	<.05	−0.15	NS
Married	0.03	NS	−0.04	NS	−0.03	NS	0.02	NS
Clinic patient 2+ years	−0.03	NS	−0.04	NS	−0.08	NS	−0.06	NS
General health	−0.19	<.01	−0.10	NS	−0.10	<.01	−0.13	<.01
Health literacy	0.35	<.01	0.35	<.01	0.50	<.01	0.29	<.01
See the same provider	0.27	<.01	0.24	<.01	0.24	<.01	0.19	<.05
Use computer	−0.004	NS	−0.01	NS	−0.09	NS	−0.03	NS
Have missed an appointment due to misunderstanding	0.08	NS	−0.01	NS	0.04	NS	−0.05	NS
Constant	2.52	<.01	1.93	<.01	0.99	<.01	3.70	<.01
R^2	0.24		0.19		0.29		0.15	
F	7.29		5.51		8.92		3.96	
P value	<.01		<.01		<.01		<.01	

Abbreviation: NS, not significant.
[a]Multivariate multiple regression. Value of *P* denotes significance from multivariate regression analysis.
[b]Higher scores indicate higher levels of providers interpersonal connection with patients, respectful communication with patients, professional partnering with patients, and patient centeredness from patient perspectives.
[c]Reference category is Spanish speakers.

the time (n = 170, 34.8%). Although the clinic has a system to request to see a specific primary care provider from patients, only one-third of the patients knew about the system (n = 165, 33.7%). Ninety percent of the participants owned a cell phone (n = 445, 91%). The majority of them owned a smart phone (n = 394, 80.6%). Forty-four percent of the participants used a computer (n = 215, 44%). Nearly 70% of the participants used social media at least once a week (n = 335, 68.5%). While the clinic sends a reminder to all patients, approximately 20% of the participants reported that they missed an appointment because they did not receive a reminder (n = 86, 17.6%). Approximately 30% of the participants missed an appointment because they misunderstood or forgot the appointment date/time (n = 140, 28.6%). Text message is the most preferred way to be reached by the clinic (n = 371, 75.9%). Spanish speakers (mean = 3.59, SD = 0.89) reported significantly higher levels of difficulties in forms than US-born (mean = 2.02, SD = 0.95) and non-US-born (mean = 2.30, SD = 1.03) English speakers ($P < .01$). United States born–English speakers reported higher levels of respectful communication with providers (mean = 3.46, SD = 0.73) than non-US-born English speakers (mean = 3.28, SD = 0.72) and Spanish speakers (mean = 3.22, SD = 0.75; $P < .05$). United States born–English speakers reported significantly higher levels of health literacy (mean = 4.44, SD = 0.58) than non-US-born English speakers (mean = 4.19, SD = 0.72) and Spanish speakers (mean = 4.18, SD = 0.63; $P < .01$). Spanish speakers had a higher rating on communication and partnership with providers (mean = 4.51, SD = 0.58) than US-born English speakers (mean = 4.27, SD = 0.89) and non-US-born English speakers (mean = 4.35, SD = 0.74; $P < .05$).

Table 3 summarizes the results of regression analysis. Higher levels of health literacy were associated with a better patient–provider relationship in all aspects ($P < .01$). Likewise, seeing the same provider each time was associated with a better patient–provider relationship in all aspects ($P < .05$ for patient centeredness, $P < .01$ for everything else).

Discussion

This study examined how health literacy, continuity of care, and self-rated health are associated with patient–provider relationships and has 3 main findings. First, higher levels of health literacy are associated with a better patient–provider relationships. Second, continuity of care is related to better patient–provider relationships. Third, better self-rated health is associated with better patient–provider relationships.

The result indicating that higher levels of health literacy are associated with better patient–provider relationships is consistent with previous studies (9). Better patient–provider relationships are related to better health outcomes (9). Health-care providers should be more cognizant of the health literacy levels of their patients and be more open, welcoming, and respectful to patients who have less health literacy in order to optimize the effectiveness of treatment (8,21). Health literacy may improve by effective communication and connection with a specific provider because patients better understand the care and/or medications that are being prescribed (22). Patients may even feel more comfortable

asking questions about treatment or diagnosis when they are more familiar with the medical provider (23).

Moreover, seeing the same provider most of the time (continuity of care) is an important factor related to improved patient–provider relationships. Seeing the same provider helps patients develop a better relationship and make clinical decisions in a way that they prefer (24). Seeing the same provider most of the time improves patient satisfaction and health outcomes (25). Additionally, Spanish speakers prefer to see the same provider more often than English speakers, which may indicate that Spanish speakers may be more uncomfortable with the health-care system due to language barriers and would prefer to see the same provider for this reason (26). It should be noted that 80% of the participants prefer to see the same provider each time but only 34% knew it was possible to request a specific provider, which could be due to lack of health literacy and lack of forming connections with the health-care provider.

The results that suggest self-rated health is associated with patient–provider relationships indicate that good patient–provider relationships are related not only to the process of quality of care (eg, patient satisfaction) but also the outcome of quality of care (eg, health outcomes). A previous study shows that the patient–provider relationship has a statistically significant effect on health-care outcomes (27). It is helpful to reduce health disparities for patients with limited English proficiency if physicians are culturally sensitive (28). Improving patient–provider relationships can be potentially related to better health outcomes for vulnerable patients.

Other notable results include differences in demographic characteristics such as educational attainment and marital status among the 3 groups—in particular, educational attainment and marital status: Spanish speakers reported the lowest levels of educational attainment and the highest rate of being married. Additionally, Spanish speakers had the lowest percentage of technology use overall. While the regression analysis did not show any association between the 3 groups and patient–provider relationships, further studies would be valuable to examine how the demographic characteristics are associated with patient–provider relationships.

While this study contributes to the knowledge about patient–provider relationships among vulnerable patients, there are some limitations. As this is a cross-sectional study, causal directions among the variables are not determined. Yet, the data which did not have significant multicollinearity among variables suggest the high quality of the data. Future longitudinal research is necessary to specify the causal directions. Two of the subscales of patient–provider relationship, respectful communication and professional partnership, showed below excellent reliability or internal consistency. This study focused on uninsured primary care patients who already have access to care at a free clinic and did not include other sorts of vulnerable patients (eg, under-insured patients). In addition, the participants of this study were English or Spanish speakers. Those who did not speak English or Spanish were not included. Future studies should take other types of vulnerable patients into account. The data of this study were collected at one free clinic where half of the patients are Hispanic. While the results may be applicable for patients of free clinics that have a large percentage of Hispanic patients, those results may not be generalizable to free clinics which have different patient demographic characteristics. This study was conducted at a free clinic that utilizes over 100 volunteer medical providers. Due to the variability of volunteer schedules (especially in the summer months, when these surveys were collected), it could be difficult to schedule patients with the same medical provider for each visit to the clinic. The fact that providers are volunteers with irregular schedules in this setting could be a significant factor in regular patient access, as well as patients' knowledge of the option to see the same provider. Finally, while there are potentially other factors that could affect provider–patient relationship, this study focused only on 3 factors. Future research should explore more factors.

This study examined patient–provider relationships associated with health literacy, continuity of care, and self-rated health. Informing patients that they can request a specific medical provider may allow them to seek continuity of care. Continuity of care would be associated with improved communication, partnering, connection, and patient centeredness, with an increase in health literacy and better self-rated health. In future research, it may be interesting to evaluate whether health-care providers at free clinics feel a different level of connection to patients compared to a non-free community clinic. Another possible avenue could be whether the presence of an interpreter enhances the patient–provider relationship by increasing health literacy, or if an interpreter is required to be a part of the team in continuity of care. Future research should build off of the results and limitations of this study by further examining patient–provider relationships, health literacy, continuity of care, self-rated health, and additional factors among various vulnerable populations throughout the United States, including uninsured free-clinic patients. The exploration of patient–provider relationships are important to reduce health disparities. Improving health literacy and continuity of care could help improve patient–provider relationships for vulnerable populations.

Authors' Note

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ORCID iDs

Akiko Kamimura, PhD, MSW, MA https://orcid.org/0000-0001-6528-5770
Edward Lee, BS https://orcid.org/0000-0002-8089-5830

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Author Biographies

Akiko Kamimura is Associate Professor of Sociology at the University of Utah. Her primary areas of interest include social determinants of health, health disparities, minority and immigrant health, and community-based research.

Rebecca Higham was an undergraduate student studying Sociology and Health, Society, and Policy at the University of Utah when the study was conducted. Her research interests include health disparities, minority health, and global health.

Naveen Rathi is a medical student at the University of Utah School of Medicine. His research interests include health disparities and public health.

Samin Panahi is a PhD student in Sociology at the University of Utah. She is interested in health disparities, immigrant health and global health.

Edward Lee is an aspiring physician who graduated from the University of Utah. His research interests include medically underserved populations and public health.

Jeanie Ashby is an Executive Director of the Maliheh Free Clinic. She is an energetic leader with 15 years' experience in health care management and has passion for lifting others out of poverty by improving access to healthcare.