Patient reported interpersonal processes of care and perceived social position: the Diabetes Study of Northern California (DISTANCE)

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Abstract

Objective—A patient's sense of his/her standing in the social hierarchy may impact interpersonal processes of care (IPC) within the patient-provider encounter. We investigated the association of perceived social position with patient-reported IPC.

Methods—We used survey data from the Diabetes Study of Northern California (DISTANCE), studying 11,105 insured patients with diabetes cared for in an integrated healthcare delivery system. Perceived social position was based on the MacArthur subjective social status ladder. Patient-reported IPC was based on a combined scale adapted from the Consumer Assessment of Health Plans Study provider communication subscale and the Trust in Physicians scale.

Results—Lower perceived social position was associated with poorer reported IPC (p<0.001). The relationship remained statistically significant after controlling for age, sex, race/ethnicity, depressive symptoms, physical functioning, income and education.

Conclusion—Beyond objective measures of SES, patients' sense of where they fall in the social hierarchy may represent a pathway between social position and patient satisfaction with the quality of patient-provider communication in chronic disease.

Practice Implications—Interventions to address disparities in communication in primary care should incorporate notions of patients' social position.

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Keywords

patient-physician communication; interpersonal processes of care; patient satisfaction; perceived social position; subjective socioeconomic status; diabetes

1. Introduction

Interpersonal processes of care (IPC) such as patient-provider communication play an important role in chronic disease management. [1, 2] Such social-psychological domains of the patient-provider interaction have been linked with the over-all quality of medical care: Patient-reported assessment of provider communication appears to affect the adoption of health behaviors and the quality of disease self-management. [3–5] Communication that is more patient-centered is associated with greater patient satisfaction, better adherence, and improved disease outcomes. [6–8] Moreover, patient-reported IPC is increasingly utilized as a quality measure for health plans, clinics, and providers. [9–12]

Disparities in IPC exist across socioeconomic groups. Patients of lower socioeconomic status (SES) receive less provider time, fewer in-depth explanations, and overall poorer communication. [13, 14] Providers spend less time offering information and explanations to lower SES patients, independent of the severity of illness. [15]

Socio-linguistic patterns in clinical interactions also differ by SES. [16, 17] Patients of lower SES offer less information and are less assertive when speaking with providers. [18–20] There is evidence of a bi-directional reciprocal relationship between provider and patient communication behavior, such that more active patient involvement generates more extensive and intensive provider communication. [21, 22]

In studies of IPC, SES has been measured by educational attainment, personal or family income, or occupational grade. [13, 15, 19, 21, 23] Different measures of SES reflect different aspects of the social gradient, and access to different types of resources and opportunities. SES conveys position in a social hierarchy in addition to material resources. [24] Recent work on the health effects of the social hierarchy has focused on subjective socioeconomic status, or perceived social position. [25] As a measure emphasizing relative SES, perceived social position may additionally reflect perceptions of inequality or subordination. [26, 27] Perceived social position has been linked to a range of health indicators including self-reported health, [28–30] physical functioning [31], diabetes [32] and mortality. [33] Since communication practices across power gradients may be sensitive to relative position in the social hierarchy, patients' perceived social position – rather than measures of objective SES – may be more powerfully linked to reported interpersonal processes within the patient-provider encounter.

We investigated the association of perceived social position with patient-reported IPC (referred to here as "IPC" for brevity) in an ethnically diverse cohort of insured, adult patients with diabetes receiving care in an integrated delivery system. We hypothesized that patients with lower perceived social position would report poorer IPC than those with higher perceived social position. We also explored whether the posited relationship between perceived social position and IPC was independent of objective measures of SES. We hypothesized that perceived social position is an independent predictor, measuring a feature of SES not accounted for by individual-level, objective measures.

2. Methods

2.1 Setting and Subjects

The Diabetes Study of Northern California (DISTANCE) was a cohort study designed to explore the role of social and behavioral factors in diabetes disparities. All participants were members of Kaiser Permanente of Northern California, a large not-for-profit, integrated health plan and resided in northern California. Details of the study design have been previously published. [34]

Briefly, the survey sample was derived from a diabetes registry maintained by Kaiser Permanente Northern California. The registry included approximately 200,000 patients who were identified as having diabetes from administrative records. Overall, patients were representative of the socioeconomic distribution of the catchment population, excepting extreme poverty or wealth. Subjects aged 30 to 75 at baseline were randomly sampled from this registry within racial/ethnic strata and asked to participate in the survey study. Participants were generally employed or retired. During 2005–2006, subjects were surveyed using four optional modalities: computer-assisted telephone interview, internet survey, self-administered written survey, or a short version of the written survey. In total, 20,188 subjects responded, yielding a response rate of 62% based on a standard algorithm endorsed by the Council of American Survey Research Organizations which applies the same rate of eligibility among those not contacted as observed in those contacted. There were differences in response rates by educational status and race/ethnicity, but overall responders and non-responders were similar with regards relevant associations (e.g., racial/ethnic and educational disparities in glycemic control). [34]

For this study of perceived social position and IPC, we performed a cross-sectional analysis using data obtained from the baseline questionnaire. For our analysis, we excluded those who stated that they did not have a personal provider (n = 368), or did not have a visit in the past year and therefore could not respond to questions about their care during this timeframe (n = 1,057). Because limited English proficiency affects communication through a separate set of factors [35] we also excluded participants who reported "always" or "often" having difficulty speaking or understanding English (n = 2, 206). Of those remaining, 11,105 completed at least 5 of the 7 IPC items and constituted our final sample. The DISTANCE study was approved by the institutional review boards at the Kaiser Permanente and University of California San Francisco.

2.2 Independent Variables

2.2.1 Perceived social position—We measured perceived social position using the MacArthur Subjective Social Status ladder, a self-anchoring 10-point scale. The ladder has been shown to be a valid measure of SES, maintaining a strong independent association with health across a number of settings. [28–30] It represents a "cognitive averaging" of measures of SES, and thus captures an overall sense of relative social position. [25] Respondents are presented with a picture of a ladder and the accompanying text, "Think of this ladder as representing where people stand in the United States. At the top of the ladder are the people who are best off—those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are worst off—who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top, and the lower you are, the closer you are to the people at the very bottom. Where would you place yourself on this ladder, compared to all the other people in the United States?" We treated the ladder score as a continuous variable.

2.2.2 Other independent variables—We used household income and highest educational attainment as measures of objective socioeconomic status. Both are standard measures of SES and strongly associated with health. [36, 37] Educational attainment has been shown to be an important determinant of the quality of health care provider communication in lower SES populations. [38, 39] We categorized educational attainment as "high school or less," "some college," "college degree" and "graduate school." We categorized income as less than $15,000; $15,000 to $49,999; $50,000 to $99,999 and equal to or greater than $100,000.

We included sex, age, and self-reported race/ethnicity. Because depression has been shown to be independently associated with poorer communication in patients with diabetes and other chronic diseases, [40, 41] we measured depressive symptoms using the eight-item Patient Health Questionnaire (PHQ-8). [42] Based on an *a priori* hypothesis of confounding by negative affect, we chose a conservative cut-point, dichotomizing depression as mild to severe (scores of 5 to 32) vs. none (scores of 0 to 4). Because worse physical health status has been shown to be associated with poorer communication, we measured physical function scores using the eight-item MOS Short Form (SF-8). [43] Finally, we obtained information about the primary care provider for each patient from administrative databases. This included the duration of participants' relationship with their primary care provider and the number of primary care visits within the past year.

2.3 Dependent variable

We drew items from two validated tools for assessing patient-reported interpersonal processes of care: the Consumer Assessment of Healthcare Providers and Systems (CAHPS) [44] and the Trust in Physicians Scale. [45, 46] Decisions on item inclusion were based on an exploratory factor analysis. Questions elicited participants' perceptions over the prior 12 months of how often their personal health care provider listen carefully, show respect, explain clearly, spend enough time, involve them in decisions, elicit trust and put their needs first. Response options were "never," "sometimes," "usually" and "always," scored on a 0 to 3 scale. We then summed the score for each question to arrive at an overall IPC score ranging from 0 to 21, with higher scores representing better communication. Principal component factor analysis revealed a single factor, and each item had a loading between 0.56 and 0.74. The Cronbach's alpha for all 7 items was 0.83. Based on these metrics, these items appeared to capture a broader latent variable of patient experiences of interpersonal processes of care. We therefore treated the items as a single scale.

2.4 Analysis

In order validate the perceived social position measure in our study sample, we assessed the inter-correlation of the different SES measures (income, education and perceived social position.) This was performed to confirm that perceived social position did indeed correlated with objective measures of SES and therefore measured an aspect of the social gradient. However it is important to note that rather than the correlation between objective SES measures and social position, what is important in the context of this study is the effect of social position independent of objective SES measures. This can be thought of as the association between our outcome (IPC) with the residual defined by the individual-level difference between observed vs predicted social position based on a model that regresses social position on an objective measure of SES.

Our main analytic goal was to examine the association of IPC and perceived social position. We investigated the bivariate association of IPC with independent variables and calculated mean IPC scores for each variable. We used the generalized estimating equation (GEE) for multivariate models to account for clustering, as multiple participants had the same primary

care provider. Analyses were expansion weighted to account for the race-stratified random sampling design (non-proportional sampling fractions). We used linear regression (specifying a normal distribution and identity link with an exchangeable correlation structure) to assess the change in the IPC summary score for a one-unit change (out of 10) in perceived social position.

We examined a series of adjusted GEE models. First, we controlled for age, sex, race/ethnicity, physical function, length of relationship with PCP and number of PCP visits in the past year. To test for negative affect bias, we constructed a subsequent model in which we further adjusted for depressive symptoms. Next, to test for the effect of perceived social position independent of objective measures of SES, we added income and educational status, one at a time, to the previous model. We also tested for interactions between race and SES as measured by income, education and perceived social position based on *a priori* hypotheses.

3. Results

3.1 Patient characteristics

Approximately half of the participants were male. Approximately one third (31%) were white. The remainder was approximately equally divided between African-American, Latino and Asian. Forty percent of participants reported an educational attainment of high school or less; 27% some college; 22% a college degree and 11% graduate level training. As in other U.S. samples, with corresponding distributions of income and education, perceived social position was positively skewed. On the 10-rung ladder, most of the sample (88%) placed themselves in the upper half, with a mean score of 6.4 (1.8) (Table 1). The mean IPC score was 17.4 (7.6).

3.2 Bivariate relationships

All three measures of SES – educational attainment, household income and perceived social position – were significantly correlated with one another. Correlation coefficients were similar between all measures, ranging between 0.25 and 0.27.

Age, sex, race/ethnicity, income, physical functioning, depressive symptoms and healthcare utilization measures were all significantly associated with IPC (Table 1). IPC scores across the perceived social position ladder (out of 21 possible points) ranged from 16.4 for those at the lowest rung to 18.3 for those at the highest rung. Among those with depressive symptoms, the mean IPC score was 15.9, while for those without depressive symptoms, the mean score was 17.8.

3.3 Multivariate relationships

Higher perceived social position was associated with higher IPC scores. In a model adjusted for age, sex, race/ethnicity, physical functioning, years with PCP and number of visits per year with PCP (model 1), IPC increased by 0.17 (0.11, 0.23) points for each one-unit increase in perceived social position (Table 2). When depressive symptoms were added as a covariate (model 2), the coefficient for perceived social position remained statistically significant at 0.13 (0.07, 0.19).

Latinos and Asians had IPC scores that were significantly lower than whites: −0.46 (−0.75, −0.18) and −0.49 (−0.73, −0.25) respectively in model 2. African Americans had lower IPC scores (−0.20 (−0.45, 0.05) in model 2), but the confidence interval of the estimate was too wide to rule out the possibility of chance alone. Interaction terms between race/ethnicity and

perceived social position on IPC were not statistically significant, nor were those between race and educational attainment or income (results not shown).

In order to examine whether objective measures of SES attenuated the association of perceived social position with IPC, we added educational attainment and income separately to the fully adjusted model. The association remained statistically significant in each case. The perceived social position coefficient was 0.15 (0.09, 0.22) with educational attainment in the included in model 3, and 0.12 (0.05, 0.18) with income included in model 4.

4. Discussion and Conclusion

4.1 Discussion

In a large, sociodemographically diverse diabetes population in an integrated health care delivery system, we found that lower perceived social position is associated with poorer patient-reported IPC. This association persisted even after adjusting for race/ethnicity, objective SES and markers of both physical functioning and depressive symptoms. Our findings suggest that patients' perceived social position may represent one pathway for disparities in interpersonal processes of care.

The direction of our associations are consistent with studies that suggest that patients of lower SES experience lower quality communication [13–15] and extend them by linking lower IPC scores not just to objective SES but perceived social position. Our findings provide evidence needed to further conceptualize pathways that may link patient social status and patient-provider communication. Prior research has shown that providers perceive lower SES patients to be less motivated, less intelligent and less rational [47] and provide less information and less time to lower SES patients. [13] Because we measured patients' self-reported quality of communication, our findings support the reciprocal nature of patient-provider communication and suggest that patients who self-identify as lower on the social ladder perceive slightly poorer quality of communication. An example of the consequences of perceptions of poorer communication comes from this same study population; patients with poor diabetes control who reported that their provider inadequately explained the risks and benefits of starting insulin were significantly less likely to ever fill their first insulin prescription. [5]

The effect size for the relationship between perceived social position and IPC that we observed was modest. Such an effect size is consistent with other studies of interpersonal processes utilizing similar outcome measures to explore effects of multi-morbidity and of racial concordance. [48, 49] Small numerical differences in patient-reported provider communication have been shown to affect patients' likelihood of returning for follow-up care. [50] Moreover, small changes in patient-reported process of care scores have potentially large impacts on publicly reported quality measures (e.g. CAHPS), and in turn on medical group and health plan performance ratings. [51]

Patients' perceptions of the social hierarchy appears to play a role in interpersonal processes of medical care. Patients' attitudes and behaviors in the clinic likely draw on individual experiences and culturally transmitted norms related to their position in the social hierarchy. Low SES individuals face steep gradients of social power in any number of their daily interactions, and regularly deploy a repertoire of skills and behaviors that are adaptive to these encounters (e.g. less assertive, less question-asking.) [52, 53] These skills and behaviors contrast with those which are valued by the healthcare system and providers (e.g. assertiveness, initiative and future orientation.) [54] Thus, when deployed in the clinical encounter, skills and behaviors specific to a low social position may be maladaptive, leading to poorer interpersonal processes of care.

Consistent with previous studies, we found that some non-white racial and ethnic groups generally perceive poorer provider communication. [23, 55] While Latinos and Asians perceived poorer IPC, surprisingly African Americans did not have a statistically significant difference in their ratings of provider communication compared to whites. This finding is consistent with data from the Health Information National Trends Survey. [56] Our finding is also consistent with other studies of self-reported quality in diabetic patients within the Kaiser Permanente system. [57]

We also found an association of depressive symptoms with lower IPC scores. Depression may partially mediate the relationship between low SES and poor health, [58] but other work has suggested that patients with depressive symptoms and chronic disease prefer less participatory styles. [59–61] Because depression affects perceptions of communication [40, 61] our finding in the setting of a cohort with diabetes adds to the evidence on the intersection of depressive symptoms and processes of care in chronic diseases. More importantly perceived social position maintained a significant association after adjusting for depression. This illustrates that our findings cannot be attributed to negative affect bias.

Different measures of SES likely capture different aspects of the social gradient, a finding supported by the significant but relatively weak correlations between perceived social position and objective measures of SES. Since educational attainment was not associated with IPC, conclusions about the independent contribution of perceived social position cannot be made with certainty. Heterogeneity in the quality of education within educational categories has been described [62] and may explain our finding. For instance, the quality of education corresponding to a high school diploma may vary greatly. As we measured educational attainment we were unable to capture potential variation in our study. As well, while ratings of communication quality are worse for those with low levels of education and health literacy, [39] this effect may be largest at very low levels of education that were subsumed within the larger category of "high school or less" in our analysis.

Our study has other limitations. It was conducted within a large, integrated health care delivery system. As such, it included few patients at the very high and very low extremes of the socioeconomic spectrum. Excluding low SES individuals without insurance precludes generalizing to uninsured populations. The positive skew of perceived social position limits the application of our estimates to socially marginalized populations that may have a different distribution of perceived social position. Additionally, the exclusion of participants with limited English proficiency from our sample limits generalizability to non-English speaking subjects. Given the cross-sectional design, we cannot assess causation. Moreover, it is possible that residual confounding due to other unmeasured social factors could have biased our observations. We did not observe the actual quality of patient-provider communication and thus cannot make claims about the objective content of communication. Thus, even if a provider's communication quality was completely uniform across patients within their panel, patients' perceptions of quality likely differ. As well, our measurement of patients' self-reported interpersonal processes of care may incompletely capture this construct. Finally, our findings could be attributed to unmeasured variation in provider attitudes, behavior, race/ethnicity or sex. While we did attempt to account for within-provider clustering and adjusted for two measures of care utilization, we did not assess providers' perceived social position nor did we investigate providers' perceptions of patients' social positions.

4.2 Conclusion

Previous work has shown a robust association of perceived social position with health. [25, 32, 58] Our study adds to this literature by suggesting that people's sense of where they fall in the social hierarchy may represent a pathway between SES and patient-provider

communication in chronic disease. Further work should address how perceived social position relates to directly observed communication behaviors in contrast to the self-reported measures we have used. Additionally, as cultural similarity (patients' shared beliefs and values with their provider) has been proposed as a potential mediator of patient-provider communication, [63] an examination of this would be a logical next step in investigating the effect of patients' perceived social position. This would entail a thorough investigation of provider-side characteristics including their own perceived social position. As more low SES individuals gain access to health insurance over the next several years under the Patient Protection and Affordable Care Act, understanding how the social context of low SES affects communication and other aspects of health care will be increasingly important in providing high quality chronic disease management.

4.3 Practice implications

Our results suggest that interventions to address communication in primary care should incorporate notions of patients' social position. Implications fall into two categories: First, providers should increase their self-awareness of communication practices. [64] Providers should strive to understand patients' social context, not only in terms of race/ethnicity, but social class as well. Second, there are several workforce implications. Health care workers who come from low SES backgrounds may be able to deploy communication skills that bridge the effects of social hierarchy. [65] Thus, our findings support policies encouraging the recruitment of medical students from low SES families. Additionally, the use of lay health workers in chronic disease care [66] may improve communication through similar pathways.

Acknowledgments

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Table 1

Demographics and unadjusted IPC score

	N	%	Mean IPC score (SD)	p [a]
Age				
<50	2,111	19.7	16.6 (8.0)	<0.0001
50–64	5,531	51.5	17.5 (7.3)	
65+	3,099	28.9	17.7 (7.8)	
Sex				
Male	5,369	48.5	17.2 (7.7)	<0.0001
Female	5,709	51.5	17.6 (7.6)	
Race/ethnicity				
White	3,516	31.1	17.6 (10.7)	<0.0001
African American	2,309	20.4	17.4 (5.5)	
Latino	2,029	17.9	17.0 (6.2)	
Asian	2,813	24.9	17.1 (4.8)	
Other	639	5.7	17.0 (7.0)	
Perceived social position				
1	131	1.2	16.4 (8.0)	<0.0001
2	128	1.2	16.4 (7.5)	
3	326	3.1	16.6 (8.9)	
4	616	5.8	16.3 (8.3)	
5	2,056	19.4	17.3 (7.4)	
6	1,957	18.5	17.5 (7.2)	
7	2,477	23.4	17.5 (7.8)	
8	1,913	18.1	17.8 (7.4)	
9	535	5.1	18.5 (6.7)	
10	442	4.2	18.3 (6.5)	
Income				
< $15,000	1,476	9.2	17.0 (8.1)	<0.0001
$15,000 to $49,999	5,936	37.4	17.3 (7.7)	
$50,000 to $99,999	5,709	36.0	17.7 (7.4)	
$100,000	2,767	14.4	17.7 (7.3)	
Education				
High school or less	4,379	40.1	17.4 (7.8)	0.69
Some college	2,910	26.7	17.5 (7.7)	
College degree	2,382	21.8	17.4 (7.1)	
Graduate school	1,237	11.3	17.6 (7.7)	
Physical functioning score				
<50	6,137	57.0	17.1 (8.1)	<0.0001
50	4,621	43.0	18.1 (6.6)	
Depressive symptoms				
No	8,661	87.6	17.8 (7.2)	<0.0001

	N	%	Mean IPC score (SD)	p [a]
Yes	1,229	12.4	15.9 (9.1)	
Years with PCP				
<5	5,457	49.3	17.1 (8.1)	<0.0001
5	5,621	50.7	17.8 (7.1)	
Visits with PCP per year				
<2	5,004	45.2	17.3 (7.7)	0.004
2	6,074	54.8	17.5 (7.6)	

[a] p-values incorporate weighting back to the entire diabetes registry patient population

Table 2

Bivariate and multivariate models for IPC score

	Unadjusted		Model 1[a]		Model 2[b]		Model 3[c]		Model 4[d]	
	Estimate (95% CI)	p	Estimate (95% CI)	p	Estimate (95% CI)	p	Estimate (95% CI)	p	Estimate (95% CI)	p
Perceived social position[e]	0.25 (0.21, 0.29)	<0.001	0.17 (0.11, 0.23)	<0.001	0.13 (0.07, 0.19)	<0.001	0.15 (0.09, 0.22)	<0.001	0.12 (0.05, 0.18)	<0.001
Age	0.04 (0.03, 0.04)	<0.001	0.03 (0.02, 0.04)	<0.001	0.03 (0.02, 0.04)	<0.001	0.03 (0.02, 0.04)	<0.001	0.03 (0.02, 0.04)	<0.001
Female	−0.38 (−0.53, −0.23)	<0.001	0.07 (−0.04, 0.18)	0.21	0.06 (−0.04, 0.17)	0.24	0.08 (−0.03, 0.19)	0.16	0.18 (−0.06, 0.41)	0.14
Race/ethnicity										
White	0		0		0		0		0	
African American	−0.18 (−0.85, −0.36)	0.15	−0.16 (−0.40, 0.08)	0.19	−0.20 (−0.45, 0.05)	0.11	−0.23 (−0.48, 0.02)	0.07	−0.21 (−0.46, 0.05)	0.11
Latino	−0.61 (−0.85, −0.36)	<0.001	−0.46 (−0.74, −0.18)	<0.01	−0.46 (−0.75, −0.18)	<0.01	−0.50 (−0.79, −0.21)	<0.001	−0.46 (−0.76, −0.17)	<0.01
Asian	−0.47 (−0.72, −0.22)	<0.001	−0.57 (−0.79, −0.34)	<0.001	−0.49 (−0.73, −0.25)	<0.001	−0.40 (−0.66, −0.15)	<0.01	−0.49 (−0.75, −0.24)	<0.001
Other	−0.54 (−1.05, −0.03)	0.04	−0.44 (−1.23, 0.36)	0.28	−0.40 (−1.18, 0.39)	0.32	−0.40 (−1.18, 0.34)	0.32	−0.39 (−1.19, 0.41)	0.34
Physical functioning	0.05 (0.04, 0.05)	<0.001	0.05 (0.04, 0.06)	<0.001	0.03 (0.02, 0.05)	<0.001	0.04 (0.02, 0.05)	<0.001	0.04 (0.02, 0.05)	<0.001
Years with PCP	0.02 (−0.01, 0.06)	0.19	0.08 (0.05, 0.10)	<0.001	0.08 (0.05, 0.10)	<0.001	0.08 (0.05, 0.10)	<0.001	0.08 (0.05, 0.10)	<0.001
Visits with PCP per year	0.09 (0.07, 0.10)	<0.001	0.07 (0.02, 0.12)	<0.01	0.07 (0.01, 0.13)	0.01	0.07 (0.01, 0.13)	0.02	0.09 (0.03, 0.14)	<0.01
Depressive symptoms	−1.88 (1.65, 2.11)	<0.001	--		−0.68 (−0.87, −0.49)	<0.001	−0.69 (−0.88, −0.50)	<0.001	−1.37 (−1.77, −0.97)	<0.001
Education										
High school or less	0		--		--		0		--	
Some college	0.02 (−0.16, 0.20)	0.83	--		--		0.20 (0.03, 0.38)	0.02	--	
College degree	−0.03 (−0.23, 0.17)	0.77	--		--		−0.15 (−0.36, 0.05)	0.13	--	
Graduate school	0.13 (−0.11, 0.37)	0.29	--		--		−0.23 (−0.48, 0.03)	0.08	--	
Income										
<$15,000	0		--		--		--		0	
$15,000 to $49,999	0.30 (−0.02, 0.62)	0.07	--		--		--		−0.14 (−0.62, 0.35)	0.58
$50,000 to $99,999	0.67 (0.35, 0.98)	<0.001	--		--		--		−0.01 (−0.51, 0.50)	0.98
$100,000	0.73 (0.39, 1.07)	<0.001	--		--		--		−0.17 (−0.71, 0.37)	0.54

[a] Adjusted for age, sex, race, ladder, physical functioning, years with PCP, number of visits per year with PCP

[b] Adjusted for above and any depressive symptoms

[c]Adjusted for all covariates in Model 2 and educational attainment

[d]Adjusted for all covariates in Model 2 and income

[e]Coefficient represents change in IPC per 1-unit change in perceived social positon