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Factors associated with attendance to scheduled outpatient endoscopy

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Abstract

Background—Non-attendance of 42% has been reported for outpatient colonoscopy among persons with low socioeconomic status (SES) in an open access system in the United States.

Objectives—To evaluate attendance to outpatient endoscopy among populations with low SES after in-person consultations with endoscopists prior to scheduling.

Methods—Retrospectively, we reviewed the endoscopy schedule from September 2009 to August 2010 in an inner city teaching hospital in Washington DC. We identified patients who came for their procedures. We defined non-attendance as when patients did not notify the facility up to 24 hours prior to their scheduled procedures and did not show up .

Results—A total of 3,304 patients were scheduled for outpatient endoscopy (mean age 55.2 years; 59.5% females). Only 36 (1.1%) patients were uninsured. 716 (21.7%) patients did not show up for their procedures. There were no differences in attendance by age, sex and race. Patients seen in a private endoscopist's office (OR=1.47; 95%CI: 1.07–2.04) were more likely to attend when compared to patients seen in trainees' continuity clinic. Married patients (OR=1.40; 95%CI: 1.11–1.78) were also more likely to attend. Conversely, Medicaid and uninsured patients

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were less likely to attend. Restricting our analysis to patients scheduled for only colonoscopy yielded similar results except that patients who were 50 years and older were more likely to attend.

Conclusions—Our study suggests improved attendance to endoscopy when populations with lower SES undergo prior consultation with an endoscopist. There is a potential to further improve attendance to out-patient endoscopy by directly involving the social support of the patients.

Keywords

Attendance; endoscopy; colonoscopy; adherence; health disparity; colon cancer

INTRODUCTION

Outpatient endoscopy constitutes an integral part of care plan to diagnose and treat disorders of the gastrointestinal system. In the last decade, colonoscopic screening for colorectal cancer has been increasing in the United States while usage of other acceptable screening modalities such as fecal occult blood testing, barium enema, and sigmoidoscopy has declined.^{1,2} Subjects with low socioeconomic status (SES) have disproportionately higher burden from gastrointestinal diseases that are commonly prevented, diagnosed or treated with endoscopy such as peptic ulcer disease due to higher prevalence of *Helicobacter Pylori* infection³⁻⁵ and colorectal cancer.⁶⁻⁹ Although differences in susceptibilities may contribute to the observed disparities, other barriers such as lack of healthcare insurance and language barriers¹⁰ have been suggested to play important roles as well.

Non-attendance to gastrointestinal clinic and endoscopy appointments has been documented in different regions of the world.¹¹⁻¹⁴ Corfield et al¹¹ reported a non-attendance rate of 21% to the colorectal clinic of St Thomas' Hospital, an inner city teaching hospital in London and Bateson¹² reported a non-attendance rate of up to 12.8% in a district general hospital in County Durham in the United Kingdom. In Northern Ireland, Murdock et al¹³ reported a non-attendance rate of 14% to a gastroenterology clinic in Belfast while Lee et al¹⁴ reported a non-attendance of 23.3% to their out-patient open access endoscopy unit in Dublin.

In the United States, a high rate of non-attendance to outpatient colonoscopy has been reported particularly in hospitals that cater for populations with low SES.¹⁵⁻¹⁷ Some predictors of poor attendance are female sex, younger age and government-sponsored insurance coverage, and non-attendance as high as 41.7% for outpatient colonoscopy has been reported.¹⁷ These studies have largely been in open access systems where consultation with an endoscopist is not obtained prior to scheduling or in settings with long waiting times. There is limited information on the degree of attendance achieved when a face to face consultation is obtained. Furthermore, whenever there is expansion of healthcare services for those with limited access (regardless of the country), emphasis is usually placed on provision of primary care services. Thus, specialty care (including endoscopic colorectal cancer screening) tends to be by referral and typically outside the primary care network. In the United States, the Affordable Care Act is an example of such initiative. Many people with low SES will get improved access to healthcare services, but they will be referred for specialty care services mainly in institutions that cater for the poor.

The objective of our study is to examine factors associated with attendance to outpatient endoscopy after a face to face consultation with an endoscopist prior to scheduling among patients who receive care at Howard University Hospital, an inner city tertiary care institution that caters for patients with low SES in Washington DC.

METHODS

Study population

Howard University Hospital is an inner city tertiary institution in Washington DC. Our facility is a not-for-profit organization that serves predominantly People of Afro-Caribbean origin in the District of Columbia. Referred patients are seen in 3 main settings and subsequently scheduled for endoscopy: 1) in the institution-owned and operated offices run by Attending (Consultants) physicians; 2) gastrointestinal fellowship trainees' continuity clinics under the supervision of Attending (Consultants) physicians; and 3) in private offices of community Attending physicians who are not employees of the institution. These community physicians perform their procedures in the endoscopic suites of the hospital. We also serve as a safety-net center providing specialty services for government run primary care facilities that cater for residents with low SES.

We do not have open access scheduling. Therefore, all patients scheduled were evaluated by the gastrointestinal endoscopists (gastroenterologists or surgeons) who scheduled the procedures. The typical interval between the clinic consultation and the scheduled outpatient procedure date is 2 to 4 weeks. In addition to the information provided during the consultation, patients also received an information booklet with detailed information about their procedures, required preparation and instructions on how to cancel if they were unable to adhere to their scheduled appointments. The final endoscopy schedule is typically released in the afternoon preceding the day of the procedures, and on Friday afternoons for Monday procedures. An ambulatory surgical center's staff typically called scheduled patients in the evening prior to the procedures using the final endoscopy schedule, but this information was not tracked.

Exposure and outcome measurement

The final endoscopy schedule from September 2009 to August 2010 was collected and information about patients scheduled for any outpatient gastrointestinal endoscopy was abstracted in standard fashion. Procedures that were cancelled by the endoscopists were excluded. Therefore, the present study focused only on patients who were expected for their scheduled procedures the following endoscopy day. It was expected that patients who did not cancel or reschedule or notify the facility of their inability to keep their appointments within 24 hours prior to their procedures (Friday for Monday procedures) would be attending as scheduled. Our primary outcome was attendance of the patients for their procedures.

Data analysis

We examined patients' age, sex, race-ethnicity, referral source and health insurance coverage. Chi square test was used to compare the characteristics of the patients by sex. We

used logistic regression models to evaluate the association of these variables with attendance to the scheduled procedures. We subsequently restricted our analysis to patients who were scheduled for colonoscopy only and repeated our analysis. We calculated odds ratios (OR) for attendance and 95% Confidence Intervals (CI). All reported P-values correspond to two-sided tests. STATA statistical software ® version 11.2 (College Station, Texas) was used for all analyses.

Ethical approval

This study was approved by the Institution Review Board of Howard University (IRB-10-CMED-55).

RESULTS

A total of 3,304 patients were scheduled for gastrointestinal endoscopy procedures (esophagogastroduodenoscopy (EGD), colonoscopy, endoscopic retrograde cholangiopancreatography, endoscopic ultrasonography, and gastrostomy tube placement) from September 2009 to August 2010. Of these, 2,063 (62.4%) patients were scheduled for colonoscopy only and 631 (19.1%) were scheduled for concomitant EGD and colonoscopy.

Demographic and lifestyle characteristics

The mean age of the patients was 55.2 years and 1,966 (59.5%) were females. Only 36 (1.1%) patients were uninsured (self pay). Table 1 shows the patients' characteristics with comparison by sex. A higher percentage of men were married (29.9% versus 21.6%, P value <0.001) and were more likely to have a government-based insurance coverage.

Attendance to scheduled endoscopy

A total of 2,588 (78.3%) patients came for their scheduled procedures. There was no association between age, sex or race-ethnicity and adherence to all scheduled gastrointestinal endoscopy (Table 2). However, married patients, patients with private insurance and patients seen in a private endoscopist's office were more likely to come for their procedures. When we restricted our analysis to the 2,063 patients who were scheduled for colonoscopy only, 1,609 (78.0%) patients attended. The predictors of attendance were similar to the overall results except that patients who were 50 years and older were more likely to attend their scheduled colonoscopy when compared to those younger than 50 years of age (Table 3).

DISCUSSION

In this study, we evaluated utilization of the healthcare resources after patients have been referred by their primary care physicians, and have been evaluated and scheduled for endoscopic procedures by their gastrointestinal endoscopists. Our study suggests a high non-attendance among populations with low SES, but better than what has been reported among similar populations.¹⁷ However, we observed that married patients were more likely to attend their scheduled procedures. We postulate that directly involving the social support or social network of patients with low SES may potentially improve attendance and increase

the utilization of healthcare resources. This may, perhaps, eventually lead to reduction in health disparities.

In usual clinical practice, a patient's next of kin is not typically involved in the delivery of preventive services for competent adults. Patients' families are usually involved in situations when informed consent cannot be obtained from the patient or when there have been complications in the medical care of the patient. The fact that colonoscopy is gradually becoming the dominant screening modality for colorectal cancer implies that there is a need to improve attendance to outpatient endoscopy among populations with low SES if colorectal cancer disparity by race and socioeconomic status is to be eliminated. Patient reminders by telephone, text messages and mail have been used to reduce no shows with some success.^{14, 18, 19} Another evolving intervention is provision of patient navigation services.^{16, 20} Patient navigators are paid employees that act as facilitators for patients and assist them with logistic challenges such as completion of forms, arranging transportation and coordinating appointments. We did not have a dedicated patient navigator for our endoscopy suite. This is the typical situation with facilities that cater for the populations with low SES. Owing to inadequate resources, patient navigation services are reserved for patients with actual cancer diagnosis to minimize delays in treatment by overcoming system barriers. Therefore, the use of patient navigators in preventive services has largely been in the form of demonstration projects or through externally funded grants. Based on our finding that married patients were more likely to attend their endoscopy, we postulate that directly involving a social contact that the patient recommends could be a readily available inexpensive intervention to improve attendance. This family member or friend can be engaged via a telephone conversation and he/she may be able to carry out the role of a patient navigator without any added cost to the healthcare system. Prospective studies will be needed to confirm this postulate.

Patients seen in private offices were more likely to attend when compared to those seen in the trainees' continuity clinic. Although we did not have household income information of the patients, we speculate that those seen in private offices may have more resources which enabled them to overcome some barriers to attendance such as being able to afford co-pays and ensuring transportation.

Previous studies have examined colonoscopy attendance after patients have had discussions with their primary care physicians only or in open access systems where the patients do not undergo prior consultation with a gastrointestinal endoscopist. These studies have identified younger age, female sex, type of health insurance, and lack of education or provider recommendation as being associated with lack of attendance to colorectal cancer screening.^{10, 15} In our study, we examined adherence at the final step (after primary care physician's referral, endoscopist consultation, scheduling of endoscopy and health insurance verification) and we observed that 1 in 5 patients did not attend. Patients who were 50 years and older and those with private insurance were more likely to attend their colonoscopy.. Uninsured patients and Medicaid patients were the least likely to attend.

A strength of our study was that we evaluated a large number of scheduled patients in a facility serving inner city population with low SES. However, our study has limitations. Our

study was a single institution experience. We did not have information on the income of the patients and we could not assess the out-of-pocket expenses of the patients. Furthermore, we could not assess the impact of the patient reminder telephone calls because the information was not recorded.

In conclusion, our study suggests that attendance to out-patient endoscopy improves when patients with low SES undergo prior consultation with an endoscopist and married patients were more likely to attend scheduled outpatient endoscopy indicating a potential role for patients' social network in improving attendance.

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Main messages

- Non attendance to scheduled out-patient endoscopy is particularly high among populations with low SES in open access systems
- Attendance to scheduled out-patient endoscopy is improved among patients with low SES after in-person consultation with an endoscopist prior to scheduling
- Directly engaging the social contact of scheduled patients may be an acceptable and relatively inexpensive intervention to improve attendance to out-patient endoscopy among patients with low SES

Current research questions

- Will direct involvement of patients' next of kin or social contact in preventive service delivery be acceptable to the patients?
- Will a patient's social contact be willing to serve as a lay coach to facilitate the completion of recommended medical care including endoscopy?
- Will a patient-appointed social contact acting as a lay coach be as effective as a patient navigator in facilitating completion of needed medical services?

Table 1

Characteristics of the study population and comparison by sex

Characteristics	All N=3,304	Female N=1,966	Male N=1,338	P value **
Age categories in years				0.004
< 50	780 (23.6%)	484 (24.6%)	296 (22.1%)	
50 - 64	1,889 (57.2%)	1,078 (54.8%)	811 (60.6%)	
65	635 (19.2%)	404 (20.5%)	231 (17.3%)	
Marital status				<0.001
Not Married	2,384 (75.0%)	1,481 (78.4%)	903 (70.1%)	
Married	793 (25.0%)	407 (21.6%)	386 (29.9%)	
Race-ethnicity				0.575
Black	2,581 (82.5%)	1,524 (82.0%)	1,057 (83.4%)	
Hispanic	368 (11.8%)	224 (12.0%)	144 (11.4%)	
Other *	178 (5.7%)	111 (6.0%)	67 (5.3%)	
Medical insurance				<0.001
Private Insurance	710 (21.9%)	467 (24.1%)	243 (18.6%)	
Medicare	597 (18.4%)	355 (18.3%)	242 (18.5%)	
Medicaid	687 (21.2%)	372 (19.2%)	315 (24.1%)	
Other governmental	1,210 (37.3%)	727 (37.6%)	483 (37.0%)	
Insurance Uninsured/self pay	36 (1.1%)	14 (0.7%)	22 (1.7%)	
Referral source				0.622
Fellows' clinic	267 (8.2%)	164 (8.5%)	103 (7.9%)	
Faculty clinic	1,214 (37.5%)	729 (37.9%)	485 (37.0%)	
Private clinic	1,756 (54.2%)	1,032 (53.6%)	724 (55.2%)	

* Other = white and Asian

** P value of comparison of female versus male

Table 2

Factors associated with attendance to all outpatient endoscopy

Characteristics	Number of patients scheduled	% of patients who attended	Univariable OR (95% CI)	P value	Multivariable OR (95% CI)	P value
Age categories in years						
< 50	780	77.3	Reference		Reference	
50 - 64	1,889	78.1	1.05 (0.86 – 1.28)	0.639	1.14 (0.91 – 1.42)	0.258
65	635	80.2	1.19 (0.92 – 1.53)	0.194	1.35 (0.97 – 1.87)	0.073
Sex						
Female	1,966	78.8	Reference		Reference	
Male	1,338	77.7	0.94 (0.79 – 1.11)	0.437	0.95 (0.79 – 1.15)	0.620
Marital status						
Not Married	2,384	76.9	Reference		Reference	
Married	793	84.2	1.61 (1.30 – 1.99)	<0.001	1.40 (1.11 – 1.78)	0.005
Race-ethnicity						
Black	2,581	77.7	Reference		Reference	
Hispanic	368	81.8	1.29 (0.97 – 1.70)	0.077	1.08 (0.78 – 1.48)	0.637
Other *	178	82.6	1.36 (0.91 – 2.02)	0.131	1.06 (0.70 – 1.63)	0.789
Medical insurance						
Private Insurance	710	83.7	Reference		Reference	
Medicare	597	77.9	0.69 (0.52 – 0.92)	0.008	0.60 (0.43 – 0.84)	0.003
Medicaid	687	72.5	0.51 (0.40 – 0.67)	<0.001	0.53 (0.39 – 0.71)	<0.001
Other governmental	1,210	81.2	0.84 (0.66 – 1.08)	0.167	0.77 (0.58 – 1.02)	0.067
Insurance Uninsured/self pay	36	66.7	0.39 (0.19 – 0.80)	0.011	0.44 (0.20 – 0.97)	0.042
Referral source						
Fellows' clinic	267	74.9	Reference		Reference	
Faculty clinic	1,214	76.2	1.07 (0.79 – 1.46)	0.656	0.98 (0.71 – 1.37)	0.920
Private clinic	1,756	81.9	1.51 (1.12 – 2.05)	0.007	1.47 (1.07 – 2.04)	0.019

* Other = white and Asian

Table 3

Factors associated with attendance when only colonoscopy was scheduled

Characteristics	Number of patients scheduled	% of patients who attended	Univariable OR (95% CI)	P value	Multivariable OR (95% CI)	P value
Age categories in years						
< 50	296	73.3	Reference		Reference	
50 - 64	1,314	78.7	1.34 (1.01 – 1.80)	0.045	1.50 (1.09 – 2.06)	0.013
65	453	79.0	1.37 (0.97 – 1.93)	0.071	1.63 (1.06 – 2.51)	0.025
Sex						
Female	1,145	78.0	Reference		Reference	
Male	918	78.0	1.00 (0.81 – 1.23)	0.998	1.04 (0.82 – 1.32)	0.724
Marital status						
Not Married	1,480	76.2	Reference		Reference	
Married	501	84.4	1.69 (1.29 – 2.22)	<0.001	1.57 (1.16 – 2.13)	0.004
Race-ethnicity						
Black	1,661	77.4	Reference		Reference	
Hispanic	179	83.2	1.45 (0.97 – 2.19)	0.073	1.26 (0.79 – 2.01)	0.330
Other *	108	80.6	1.21 (0.74 – 1.98)	0.442	0.93 (0.55 – 1.58)	0.797
Medical insurance						
Private Insurance	451	82.5	Reference		Reference	
Medicare	404	77.0	0.71 (0.51 – 0.99)	0.046	0.60 (0.40 – 0.90)	0.013
Medicaid	428	72.0	0.55 (0.40 – 0.75)	<0.001	0.54 (0.37 – 0.78)	<0.001
Other governmental	721	82.1	0.97 (0.72 – 1.33)	0.870	0.88 (0.62 – 1.26)	0.483
Insurance Uninsured/self pay	28	67.9	0.45 (0.20 – 1.03)	0.058	0.52 (0.21 – 1.32)	0.167
Referral source						
Fellows' clinic	159	73.6	Reference		Reference	
Faculty clinic	783	76.5	1.17 (0.79 – 1.72)	0.433	1.02 (0.67 – 1.55)	0.933
Private clinic	1081	81.8	1.61 (1.10 – 2.37)	0.015	1.53 (1.01 – 2.31)	0.044

* Other = white and Asian