Decreasing Disparities in Colorectal Cancer Prevention using a Culturally Tailored Patient Navigator Program

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Background: Despite evidence that reductions in colorectal cancer (CRC) morbidity and mortality can be achieved through early detection and treatment, CRC screening rates are relatively low, particularly in low-income and minority patients. In 2007, a culturally-tailored, multi-faceted CRC screening navigator program was implemented at an urban community health center (CHC) with the aim of increasing CRC screening. We sought to evaluate the impact of the CRC screening patient navigator program on disparities in CRC prevention during the four years of the program.

Methods: All patients due for CRC screening at the CHC were offered patient navigation (PN). CRC screening rates in patients getting care at the CHC with PN were compared with the CRC screening rates in patients receiving care in the other practices within the same academic primary care network during 2006–2010 using chi-square tests. CRC screening rates for non-English speaking and Latino patients in these two settings were analyzed separately. To determine whether the rate of increase in CRC screening was greater at the site with PN compared to other practices over the four years, we ran logistic regression models which adjusted for age, gender, race, language, insurance status, and calendar year among all patients. Similar models were also performed comparing non-English speaking patients and Latino patients at the site with PN compared to those at the non-PN clinical sites. Adjusted slopes were calculated by including an interaction term between primary care site and calendar year.

Results: In 2006, before the CRC screening PN program was established, 49.2% of all eligible patients at the CHC were up to date for CRC screening compared with 62.5% of patients cared for in other practices. In 2010 the CRC screening rate at the CHC was 69.2%, compared with 73.6% (p<0.001) in practices without PN. Non-English speaking patients from the CHC had similar CRC screening rates in 2006 compared to other practices (44.3% vs. 44.7%, p=0.79), but higher screening rates in 2010 (70.6% vs. 58.6%, p<0.001). Latino patients at the CHC had lower CRC screening rates in 2006 compared to other practices (47.5% vs. 52.1%, p=0.02), but had higher screening rates in 2010 (73.5% vs. 67.3%, p<0.001). Among all patients, the adjusted rate of increase was higher in patients from the CHC compared to other practices (5.0% vs. 3.4% per year, difference = 1.6%, p<0.001). Additionally, the adjusted rate of increase was higher in patients from the CHC compared to other practices for non-English speaking patients (6.4% vs. 3.6% per year, difference = 2.8%, p<0.001) and Latino patients (6.3% vs. 3.8% per year, difference = 2.5%, p<0.001).

Conclusions: Culturally-tailored CRC screening patient navigator programs can not only increase the overall colorectal screening rates, but can significantly decrease disparities in CRC prevention in vulnerable patients. Long term support of patient navigator programs is a promising method for reducing cancer screening disparities.
A New Model of Retention for Health Education/Behavioral Interventions: Urban African-Americans in the Diabetes Empowerment Program

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**Background:** Culturally-tailored diabetes education can improve diabetes self-management and self-efficacy among African-Americans, but attrition is often a barrier to program effectiveness. Attrition from basic diabetes education ranges from 4-57% and is associated with higher HbA1c, blood pressure and BMI as well as increased complications. Despite the importance of retention in health outcomes, research describing minority retention in health education/behavioral interventions is lacking.

The Diabetes Empowerment Program combines diabetes education and patient/provider communication training and is culturally-tailored for African-Americans. This program not only improved diabetes self-management but also had notably high retention rates. Despite the intensity of the ten-week program, 70% of the 50 participants attended \(\geq 80\%\) of the classes. We sought to investigate the program’s successful retention in order to address significant gaps in the literature describing minority retention in health education.

**Methods:** We conducted four focus groups (n= 31) and seven in-depth interviews (n= 7) with former participants of the Diabetes Empowerment Program. Interviews and focus groups were conducted by trained interviewers with experience discussing health and communication. Using a structured topic guide, interviewers asked participants to identify and discuss factors influencing their attendance. Each interview/focus group was audio-taped, transcribed verbatim and analyzed using Atlas.ti software. Coding was conducted using an iterative process; each transcription was independently coded by two members of the research team.

**Results:** Participants discussed multiple program characteristics contributing to successful retention, from which we identified the following key themes:

1. **Relevant information:** The curriculum was culturally-tailored and practical, incorporating participants’ traditional diets and community resources and reinforcing information with practical skills training (e.g. touring grocery stores, understanding lab results).

2. **Program leadership:** Educators were experienced with the local population and in culturally-tailored patient activation. Instructors’ willingness to listen and their caring disposition were consistently cited.

3. **Social support:** Drawing on the African-American tradition of testifying, participants were encouraged to share their stories. The opportunity to be heard and to hear others’ experiences was described as relieving, encouraging and educational.

4. **Principles of the African-American Helping Tradition:** Many participants explained that by sharing their new knowledge and experiences, they hoped to help their peers prevent and manage diabetes.

**Conclusions:** Based on these results, we suggest a new conceptual model of retention for African-Americans in health education/behavioral interventions. Our model is different from frameworks describing retention in clinical trials, which emphasize contact, scheduling and logistics of research visits. Our results support prioritizing culturally-tailored program design, qualified and openly caring educators and interpersonal support among participants. Our recommended strategies are low-cost and can contribute importantly to interventions in low-resource settings. This understanding of program factors that improve retention among urban African-Americans with diabetes may be applicable to other health education/behavioral interventions and may help to reduce disparities in disease control and outcomes.
Discrimination and medication adherence in hypertensive African Americans: The role of stress and depression

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**Background:** Poor adherence to antihypertensive medication among African Americans is recognized as a major contributor to racial disparities in blood pressure control. Research has shown that psychosocial factors such as stress and depression are associated with poor medication adherence. Perceived racial discrimination is an important psychosocial factor that has been associated with poor health outcomes in African Americans; its effect on medication adherence among hypertensive patients remains untested. In this study, we examined the influence of discrimination on medication adherence among hypertensive African American patients, and the mediating role of stress and depressive symptoms on this relationship.

**Methods:** Participants were 740 patients enrolled in the Counseling African American To Control Hypertension (CAATCH) trial. CAATCH was a cluster-randomized trial designed to evaluate the effectiveness of a multilevel intervention, targeted at physicians and patients, on blood pressure control among hypertensive African Americans followed in 30 underserved community health centers. Analysis for this substudy utilized baseline measurements from CAATCH participants with complete data. The outcome variable was medication adherence assessed with the Morisky scale; higher scores indicate poor adherence. The predictor variable, perceived racial discrimination was assessed with the lifetime scale of the Schedule of Racist Events; higher scores indicate more frequent exposure to perceived discrimination. The mediator variables were stress, assessed with the Perceived Stress Scale, and depressive symptoms, assessed with the PHQ-9, with higher scores indicating more stress and depressive symptoms, respectively. Mediation was tested using the Baron and Kenny analytic framework examining four regression pathways. Age, income and education level were controlled for in all analyses. The Sobel test was used to determine if the mediating effect was significant.

**Results:** Most patients were low-income and had a high school education, with a mean age of 57 years. In pathway 1, discrimination was associated with poor medication adherence (\(\beta = .086, p = .019\)). In pathway 2, discrimination was associated with increased stress (\(\beta = .197, p = .000\)) and depressive symptoms (\(\beta = .363, p = .000\)). In pathway 3, stress (\(\beta = .236, p = .000\)) and depressive symptoms (\(\beta = .190, p = .000\)) were associated with poor medication adherence. In pathway 4, when stress and depressive symptoms were added to pathway 1, the relationship between discrimination and medication adherence became non-significant, indicating a mediating relationship (\(\beta = .008, p = .832\)). The Sobel test confirmed that the mediation was significant.

**Conclusions:** This study provides evidence that exposure to discrimination is associated with poorer medication adherence among low-income hypertensive African Americans, and that this relationship is partially explained by the negative effects of discrimination on perceived stress and depressive symptoms. Further assessment of situations where African American patients report high exposure to discrimination in combination with higher levels of perceived stress and depressive symptoms could provide a key starting point in addressing the lower rates of adherence in this patient population.
A Review of Homelessness Among Discharge Delays: making the case for medical respite care for individuals experiencing homelessness

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Background: Homelessness is associated with higher morbidity, mortality, and hospital costs. Medical respite is an emerging care management option that decreases hospital costs and readmissions by combining a 24-hour supportive shelter setting with specialized services for homeless patients with health care needs after hospital discharge. Future efforts to establish respite care centers would benefit from better understanding the health care needs of its target population. Additionally, little research has examined discharge delays of housed versus homeless patients. This study examined medical needs and discharge delays of individuals experiencing homelessness in Minneapolis, Minnesota following discharge from inpatient hospitalization to determine whether respite care could facilitate more expedient and appropriate discharges.

Methods: The study was conducted at Hennepin County Medical Center (HCMC), a 477-bed regional safety net hospital that provides care for much of Minneapolis’ homeless population. We performed a retrospective cohort analysis of admissions between January 1 and June 30, 2009 at HCMC. Data were abstracted from charts defined by HCMC as “discharge delays for external reasons,” an operational definition used by the hospital’s Utilization Management department to assess eligibility for continued inpatient stay. Using the inpatient electronic medical record, as well as electronic records from Utilization Management, patients were classified as “housed,” “not housed,” or “unknown” based on the federal definition of homelessness. Demographics, reason for admission, interventions, diagnoses, reason for delay, length of delay, and readmissions within 90 days were also abstracted. Analyses were then conducted to evaluate the relationship between housing status and discharge delay.

Results: A total of 304 charts included hospitalizations during the study period that were affected by discharge delays; 93 of which belonged to homeless patients. The median number of delay days was significantly longer for homeless than housed patients (p<0.001). The charts of 107 patients (43.3%) included psychiatric diagnoses on admission. The median number of delay days remained significantly longer for homeless patients after controlling for psychiatric diagnoses (p=0.012). For homeless patients, the most common reason for discharge delay was awaiting group home placement (35.6%) while 9.9% of delays were due to inability to find shelter placement. Other reasons included awaiting healthcare coverage, medication management, and follow-up requirements. Homeless individuals were less likely to have either public or private insurance than housed patients (p=0.011).

Conclusions: This study found that homeless patients had longer discharge delays than housed patients after inpatient hospitalizations for both medical and psychiatric reasons. The most common reason for discharge delays of homeless patients was awaiting a group-home bed. Another common reason for delay was inability to find shelter placement. Respite care facilities could potentially expedite discharge in these situations and other situations identified. Respite care could also improve the healing and recovery of individuals experiencing homelessness, a group that faces many challenges to good health.
Massachusetts Health Reform Did Not Reduce 30-day Readmissions for Acute Myocardial Infarction among Massachusetts Residents Overall or among Racial/Ethnic Minorities

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Background: Following Massachusetts (MA) health reform, the percent of uninsured residents fell from 8.4% to 3.4%. Prior studies have not examined the effect of this policy change on 30-day readmission rates for acute myocardial infarction (AMI). We hypothesized that these admissions, which are sensitive to access to outpatient care, would decline in MA following reform, particularly among minorities historically disadvantaged in terms of insurance coverage.

Methods: We analyzed 2004-2009 inpatient discharge data from MA and New York ([NY], which did not undergo health reform). We compared 30-day readmission rates (for any cause) after a hospitalization for AMI overall, and among racial/ethnic subgroups, for patients age 18-64 (those affected by health reform) in the 21 months prior to and following MA reform. We used chi-square tests to compare unadjusted 30-day readmissions for AMI between groups. Treating MA adults as the intervention cohort, and NY adults as the control cohort, we used logistic regression to conduct a difference-in-difference analysis that estimates odds of readmission in the post-reform period vs. the pre-reform period in MA adjusted for secular changes unrelated to reform. We performed this analysis for the entire sample and also stratified by whites, blacks, and Hispanics. The model was also adjusted for age, gender, and Charlson Comorbidity Score. In order to assess differences in white vs. minority disparities over time between the pre and post reform periods in MA relative to NY, we used logistic regression to conduct a difference-in-difference-in-differences analysis.

Results: There were 50,720 admissions for AMI in NY and MA over the study period. In MA, pre-reform and post-reform readmission rates were 11.5% and 10.5%. In NY, they were 12.8% and 12.3% respectively. The post-reform decrease in MA was not significantly different than that in NY (difference-in-difference-adjusted OR [AOR] 1.0, 95% confidence interval [CI], 0.9-1.1). In MA, blacks had higher readmission rates than whites both pre-reform (16.9% vs. 11.3%; p=0.003) and post-reform (16.1% vs. 10.2%; p =0.0006). In NY, blacks also had higher readmission rates than whites pre-reform (18.8% vs. 11.4%; p=0.0001) and post-reform (17.2% vs. 11.2%; p< 0.0001). Prior to reform in MA, Hispanics had significantly higher readmission rates than whites (16.5% vs. 11.3%, p=0.005); post-reform there was no significant difference in readmission rates (12.8% vs. 10.2%, p=0.1). In NY, Hispanics had significantly higher readmission rates than whites, both pre- and post-reform (15.9% vs. 11.4%, p<0.0001 and 16.3% vs.11.2%, p<0.0001, respectively). Difference-in-difference estimates stratified by race/ethnicity indicated that the post-reform changes in readmission rates in MA and NY were not significantly different among whites, blacks, and Hispanics. In difference-in-difference-in-differences analyses, there was no significant change in the presence of disparities between whites and blacks or between whites and Hispanics in NY vs. MA pre- and post-reform.

Conclusions: A major coverage expansion in MA was not associated with a reduction in 30-day readmissions for AMI overall or a reduction in racial and ethnic disparities in this outcome. Other interventions may be needed to further reduce 30-day readmissions for AMI overall, and to decrease disparities in such readmissions.
A Randomized Trial of Phone-Based Motivational Interviewing On Adherence to Clopidogrel After a Coronary Stent Among Black And Hispanic Subjects

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Background: Racial/ethnic minorities who receive coronary stents have lower medication adherence to antiplatelet agents. Motivational interviewing (MI) has been effective at inducing behavior change among patients with cardiovascular risk factors. The aim of this study is to compare the efficacy of phone-delivered MI to an educational video at improving medication adherence to clopidogrel among insured minorities.

Methods: We conducted a randomized trial of Black and Hispanic patients enrolled in a health benefits plan who had recently received a coronary stent. Study patients were randomly assigned to either a telephone based MI intervention or a culturally tailored educational video. The MI intervention consisted of 4 phone-based encounters by trained nurses over 9 months each lasting about 20 minutes made from a centralized location. Outcomes variables collected at baseline and 12-month using surveys and administrative data included self-reported adherence (Morisky score), self reported forgetfulness and carelessness when taking antiplatelet medications and self reported completion of 12 month of therapy (only in 12 month survey). We used ttest and chi-square methods to compare outcomes between groups and used logistic regression to model predictors of self-reported forgetfulness taking medications.

Results: We recruited 339 minorities (58% Hispanics and 42% Black) from 21 different states who had received a new coronary stent. Patients had a mean age of 69.5±8.8, 52% were males, 78% had an income less than $30,000/yr and only 22% had greater than high school education. At 12 months, as compared to the video group, patients in the MI group had significantly better self-reported adherence (lower Morisky score), and were less likely to report being forgetful or careless about taking antiplatelet medications (Table 1). Other important predictors of self-reported adherence at 12 months were low health literacy, black race, and depression (p<0.01). Adjusting for these factors as well as socio-demographic characteristics, co-morbidities and baseline Morisky score at baseline did not significantly change our findings.

Conclusions: Among blacks and Hispanics patients, phone-based motivational interviewing resulted in higher self-reported adherence to clopidogrel after a coronary stent versus a mailed video. A centralized phone-based MI seems to be a promising cost-effective strategy which may help prevent stent re-occlusion among a large geographically diverse sample of minority patients. Analyses of medication adherence using claims data (medication possession ratio) will be completed by May 2012.