PSYCHIATRIC SYMPTOM PRESENTATION IN ETHNICALLY DIVERSE CARDIOLOGY PATIENTS

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Objectives: The purpose of our study was to examine rates of depression and distress among different ethnic groups receiving care in an outpatient cardiology clinic.

Design: Cross sectional study.

Setting: Participants were recruited from an urban cardiology clinic.

Participants: Data are presented for 1003 patients screened between June 2005 and November 2007. The ethnic groups represented were Hispanics (504 patients or 50% of the sample), Southeast Asians (229 patients or 23%), Caucasians (114 patients or 11%), East Asians (89 patients or 9%), Africans (53 patients or 5%), and 14 patients (2%) of unknown or other ethic backgrounds.

Main Outcome Measures: All patients registered for an outpatient visit received questionnaires, in English or Spanish, screening for depression (Patient Health Questionnaire [PHQ-9]) and distress (the Impact of Events Scale [IES]).

Results: Overall, significantly more patients screened positive for distress than depression (33% vs 27%, X^2=130.11, P=.00). The ANOVA comparing PHQ scores by ethnic group was significant, $F(4, 867)=4.46$, P=.01 with Hispanics and Southeast Asians scoring significantly higher than East Asians. An ANOVA comparing IES scores by ethnic group was also significant, $F(4, 760)=3.63$, P=.01.with Southeast Asians scoring significantly higher than Caucasians.

Conclusions: Elevated levels of psychiatric symptoms are common across ethnic groups in medical settings, particularly in patients of Hispanic and Southeast Asian origin. Devising culturally sensitive procedures is imperative to successful screening and evaluation. (*Ethn Dis*. 2009;19:271–275)

Key Words: Ethnicity, cardiology, depression, distress, mental health screening

INTRODUCTION

Medically ill patients are at increased risk for psychiatric symptoms such as depression and post traumatic stress disorder (PTSD). Among coronary heart disease patients rates of depression range from 7%–40%.[1–3] In this population, depression is associated with poorer medical outcomes and quality of life,[4] medication nonadherence[5] and is a consistent predictor of mortality post myocardial infarction (MI).[6] Patients who have suffered MI are also at risk for experiencing symptoms of PTSD. In the first year after MI, as many as 8%–25% of patients develop this disorder, which is also associated with poorer medical outcomes[7–10] and nonadherence to medications.[10–11] Few studies have examined the prevalence of these psychiatric symptoms in ethnic minorities with heart disease[12] and therefore we do not have a firm understanding of symptom levels among patients from diverse backgrounds. In a large sample composed of primary care, cardiac and diabetic patients, researchers found no difference in depression prevalence (16% overall) between ethnic groups examined (African American, Asian American, Caucasians, Hispanics) when controlling for socio-economic status (SES).[13] Caucasians, though, were more likely to report suicide ideation. In order to broaden our understanding of the interface between medical and psychiatric presentations, investigations of ethnically diverse cohorts are necessary.

In the first year after MI, as many as 8%–25% of patients develop post-traumatic stress disorder, which is also associated with poorer medical outcomes[7–10] and nonadherence to medications.[10–11]

Disparities exist in the identification and subsequent treatment of psychiatric symptoms among ethnic minorities.[14] In particular, psychiatric symptoms among medically ill patients from minority backgrounds have been largely understudied. Previously, a clinical mental health screening program was implemented in an urban cardiology clinic serving an ethnically diverse, socio-economically uniform population.[15] Because of this effort, we were able to examine symptoms of depression and PTSD while controlling for SES. The purpose of our study was to examine rates of these psychiatric symptoms among different ethnic groups of cardiac patients. We examined symptom levels in a cohort of patients screened for depression and distress as part of an ongoing clinical program. Screening for depression and posttraumatic stress was undertaken because of the established rates of these symptoms

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among patients with cardiovascular disease.[16]

METHODS

Participants

Data have been evaluated for 1003 patients screened between June 2005 and November 2007 in this ongoing program. The cardiology clinic of Elmhurst Hospital is located in the western portion of the borough of Queens in New York City. It is part of the New York City Health and Hospitals Corporation. All patients receive services irrespective of insurance status. In instances where patients present for evaluation and/or treatment but do not have insurance, they are referred to the "HHC Options" program to establish a sliding fee scale within their financial means. Elmhurst is one of the most ethnically diverse zip codes in the United States,[17] with more than 40 nationalities represented in its community. The primary cardiac diagnoses in the clinic are coronary artery disease and congestive heart failure. Since this was a clinical program, no specific inclusion / exclusion criteria were employed (all patients who presented to the clinic were screened). Institutional review board (IRB) approval was obtained to review screened patients' medical charts.

Procedure

All patients who registered for an outpatient visit received two questionnaires, available in English and Spanish, screening for depression and distress. Volunteers were on-hand to help patients read or translate. The objective of the screening program was to connect patients to mental health services. A positive screening result generated immediate evaluation by the cardiology team (a nurse practitioner or a physician), who decided, with the patient, whether to suggest a referral for a psychiatric evaluation. Procedures were developed to ensure that patients were seen immediately for a psychiatric consultation thereby facilitating successful referrals.

Measures

Demographic and medical variables

Demographic variables (sex, age, ethnicity, country of origin, and primary cardiac diagnosis) were obtained from the medical record. The ethnicity classification provided in the medical record was based on patient report. Patients were listed as African, Caucasian, East Asian, Hispanic, Southeast Asian (including for example Asian Indians, Pakistanis, and Bangladeshis), or Other. This distinction between East Asian and Southeast Asian has been used by others studying differences among Asian ethnic groups.[18]

Patient Health Questionnaire (PHQ[19])

This validated[20] nine-item self-report depression measure has been recommended for use in screening efforts in medical care settings and its utility in identifying cases has been shown.[21] The nine items correspond to each of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for major depression. Items are scored from "0" (not at all) to "3" (nearly every day). The final item measures how often respondents experience suicidal thoughts. Psychometric studies of the measure have shown that a score of 10 or higher has sensitivity and specifically for predicting major depression.[22]

Impact of Events Scale (IES[22])

The IES is a 15-item self-report questionnaire that measures current subjective distress related to a specific event. It serves as a useful screening tool for identifying possible cases of PTSD. The IES consists of two subscales measuring experiences of avoidance and intrusion related to the traumatic event. Good reliability and validity have been reported in multiple studies.[23–24] A high score on the IES was shown to be associated with increased risk for nonadherence to medical recommendations,[10–11] cardiovascular admissions,[10–11] and a higher cardiovascular risk profile[10–11] in patients with cardiovascular illnesses. A screening cut-off of 19 was originally recommended for identifying cases.[25] A recent study confirmed this recommendation, demonstrating that a score of 19 is associated with perfect sensitivity and acceptable specificity.[26]

Statistical Analyses

Analyses used the SPSS 12.0 (SPSS, Chicago, Ill.) statistical package. Univariate analysis of variance (ANOVA) was used to compare scores on the screening measures between ethnic groups studied. For significant ANOVAs, Tukey's post-hoc tests were used to determine group differences. Chi-tests were used to compare outcomes for categorical measures. Linear multiple regression analyses were applied to each screening measure entering the available demographic variables (age, sex, and ethnicity) as predictors. A P value (alpha level) of .05 or less, two-tailed, was chosen as the level of statistical significance.

RESULTS

Data are presented for 1003 patients screened between June 2005 and November 2007. Table 1 displays demographic characteristics of the sample. The mean age of the sample was 61.04 (SD=13.96) with 62% males. The ethnic groups represented were Hispanics (504 patients or 50% of the sample), Southeast Asians (229 patients or 23%), Caucasians (114 patients or 11%), East Asians (89 patients or 9%), Africans (53 patients or 5%), and 14 patients (2%) of unknown or other ethic backgrounds. Because of the small sample sizes, patients listed as unknown or other

Table 1. Demographic characteristics of the sample, *N* =1003

	Hispanic (*n* =504)	Southeast Asian (*n* =229)	Caucasian (N=114)	East Asian (*n*=89)	African (*n*=53)	Other (*n*=6)	Unknown (*n*=8)
Age (SD)	61.75 (14.76)	58.45 (11.65)	62.83 (14.29)	59.57 (14.86)	62.98 (12.74)	67.00	65.33
Sex							
Male (%)	282 (56.0)	174 (76.0)	75 (65.8)	58 (65.2)	28 (52.8)	4 (66.7)	4 (50.0)
Female (%)	222 (44.0)	55 (24.0)	39 (34.2)	31 (45.8)	25 (47.2)	2 (33.3)	4 (50.0)

SD= Standard deviation.

ethnic backgrounds were excluded from subsequent analyses. A preliminary ANOVA revealed significant differences in age between the ethnic groups examined, $F(4, 984) = 3.26$, $P=.01$. Similarly, sex breakdown also differed across the ethnic groups, $X^2 = 28.85$, $P=.00$. Patients were from 67 different countries. Coronary artery disease was the most common primary cardiac diagnosis (482 patients or 48%) followed by congestive heart failure (176 patients or 18%).

Table 2 presents the mean scores and percentage of patients who screened positive by ethnic group on the psychiatric measures. Twelve percent (117 patients) of the sample did not complete the PHQ while 23% (226 patients) did not complete the IES. Scores on the PHQ and IES symptoms were highly correlated, $r=.23$, $P=.00$. Overall, significantly more patients screened positive for symptoms of PTS than depression (33% vs 27%, $X^2=130.11$, $P=.00$). When examined separately, each ethnic group also displayed this pattern at $P=.00$.

We next examined differences on screening measures scores between the ethnic groups represented. An ANOVA comparing scores on the PHQ by ethnic group was significant, $F(4, 867)=4.46$, $P=.01$. Tukey's tests revealed that Hispanics and Southeast Asians scored significantly higher than Caucasians and East Asians. The ANOVA comparing scores on the IES by ethnic group was also significant, $F(4, 760) = 3.63$, $P=.01$. Tukey's tests revealed that Southeast Asians scored significantly higher than Caucasians.

Multivariate analyses were then conducted to examine screening measure scores with the available demographic variables (age, gender, and ethnicity) entered as predictors. A simultaneous linear regression predicting PHQ score was significant, $F(3, 871) = 3.17$, $P=.02$. Sex, $t=3.03$, $P=.00$, was the only significant predictor in the resulting model. A simultaneous linear regression predicting IES score was also significant, $F(3, 764)=6.79$, $P=.02$. Sex again, $t=3.23$, $P=.00$, was the only significant predictor. Independent samples t tests revealed that women scored higher than men on the PHQ ($t=-3.00$, $P=.00$) and the IES ($t=-3.05$, $P=.00$).

Finally, we then examined whether there were differences by ethnicity in the number of patients screening positive for suicide ideation. A Chi-square test showed that there was no difference between the groups on PHQ item #9 which assess suicidal thoughts, $P=.053$.

DISCUSSION

Our findings suggest that, after controlling for SES, symptoms of depression and PTS are common among ethnically diverse cardiology patients. Regardless of ethnicity, women appear to be at greater risk for psychiatric symptoms among urban cardiac patients. This result is consistent with other studies of cardiac patients indicating sex differences in mental health and quality of life.[27–28] Across ethnic groups, we detected prevalence of symptoms comparable to others[13] who have found high rates of these specific psychiatric symptoms among similar populations. Our results perhaps expand the scope of prevalence estimates to some ethnic minorities as well. To our knowledge, this study is the first to

Table 2. Screening measure scores by ethnicity

	PHQ Mean Score (SD)	PHQ Threshold	PHQ Threshold, Suicide Item	IES Mean Score (SD)	IES Threshold
Hispanic	6.73 (6.37)	30%	12%	13.97 (14.75)	31%
Southeast Asian	6.83 (6.34)	28%	18%	16.99 (15.47)	39%
Caucasian	4.67 (5.70)	19%	6%	10.07 (15.34)	19%
East Asian	4.42 (5.20)	17%	11%	14.08 (15.36)	33%
African	7.00 (6.26)	35%	15%	17.23 (15.20)	43%
P value	<.01	.99	.05	.01	.06

SD= Standard deviation.

examine psychiatric symptoms in Southeast Asian patients, who had relatively high levels of both depressive and distress symptoms. Levels of depression differed among the ethnic groups studied with Hispanics and Southeast Asians presenting with significantly higher levels then Caucasians and East Asians. The importance of studying Asian ethnic groups separately has been emphasized in one study,[18] which also found that Southeast Asians more frequently report emotional symptoms then other Asian groups studied.

We did not detect ethnic differences in suicide ideation, whereas a previous study[13] found that Caucasians had higher levels than others. This difference could be due to the conservative measure we used (eg, any score above "0" on PHQ item nine) instead of an aggregate level of suicide ideation. Because our suicide screen was part of an ongoing clinical program, the measure was meant to discover cases that required follow-up care, possibly at an urgent level, rather then a continuous magnitude of suicide ideation.

Levels of PTS were uniformly high among the ethnic groups served by this cardiology clinic. We found that symptoms of PTS are more common than depression. A growing body of research has shown the appropriateness of applying a trauma-model to some medical diagnoses, such as MI,[10–11] and subsequent treatments, which can be highly invasive and painful. In cardiac patients, the association between PTS and poor medical outcomes and nonadherence is stronger then the association between depressive symptoms and corresponding outcomes.[10–11] It is not uncommon, as we also found, for distress to be associated with depression,[10–11] but measuring and treating PTS separately is likely warranted.

Our study is limited by relatively small cohorts of ethnic groups examined, particularly patients of African descent. As this study occurred in a real-world setting, we could only examine the ethnic groups predominantly presenting in this clinic. Certainly, expansion of programs, such as ours, to increasingly heterogeneous patient groups is necessary. Finally, the measures selected for screening were given only in their English and Spanish versions, which were not the primary languages of all patients. Ideally, patients would be able to complete these measures in their primary language, likely increasing the effectiveness of the screening process.

We found that symptoms of PTS are more common than depression.

CONCLUSIONS

Elevated levels of psychiatric symptoms are common in a wide range of ethnic groups; therefore, devising culturally sensitive procedures is imperative to successful screening and evaluation. However, this study was performed in one specialty clinic within a single medical center that serves an ethnically diverse population. To the extent that they generalize to other centers with similar patient characteristics, our results strongly suggest, first and foremost, that mental health screening in urban medical subspecialty clinics may be a useful adjunct to treatment given the high rates of psychiatric symptoms uncovered.

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