Prevalence and Health Status Differences in Disadvantaged Diabetic Patients with Depression

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Participating sites

- **Connecticut Primary Care Association & New England Clinicians Forum (PBRN)**
- **Department of Family Medicine, UMMS (academic partner and IRB)**
- **Fair Haven Community Health Center, New Haven CT**
- **Holyoke Health Center, Holyoke, MA**
- **Neponset Health Center, Dorchester, MA**

Team members

- UMMS: Mary Lindholm, MD, Ken Fletcher, PhD, Gail Sawosik, UMMS; Bob Magner, Lax Paropkari

- Holyoke Health Center: Laura Failla Manship, LICSW & Lorianne Ruiz

- Neponset Health Center/Harbor Health Services: Jessica Oviatt, Robin White, Robert Hock, MD, Joanne Tuller, LISCW, Judy Steinberg,MD, Jeanne Pastorello, NP

- Fair Haven Community Health Center: Amy Meyers, MSW, Ann Camp, MD, Ann Somsel

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Study Aims

- What is the prevalence of depression in adult Type II diabetics who receive their health care in community health centers

- Is depression associated with poorer diabetes self-management and control?

- Does diabetes self-management and control improve when patients receive depression treatment?

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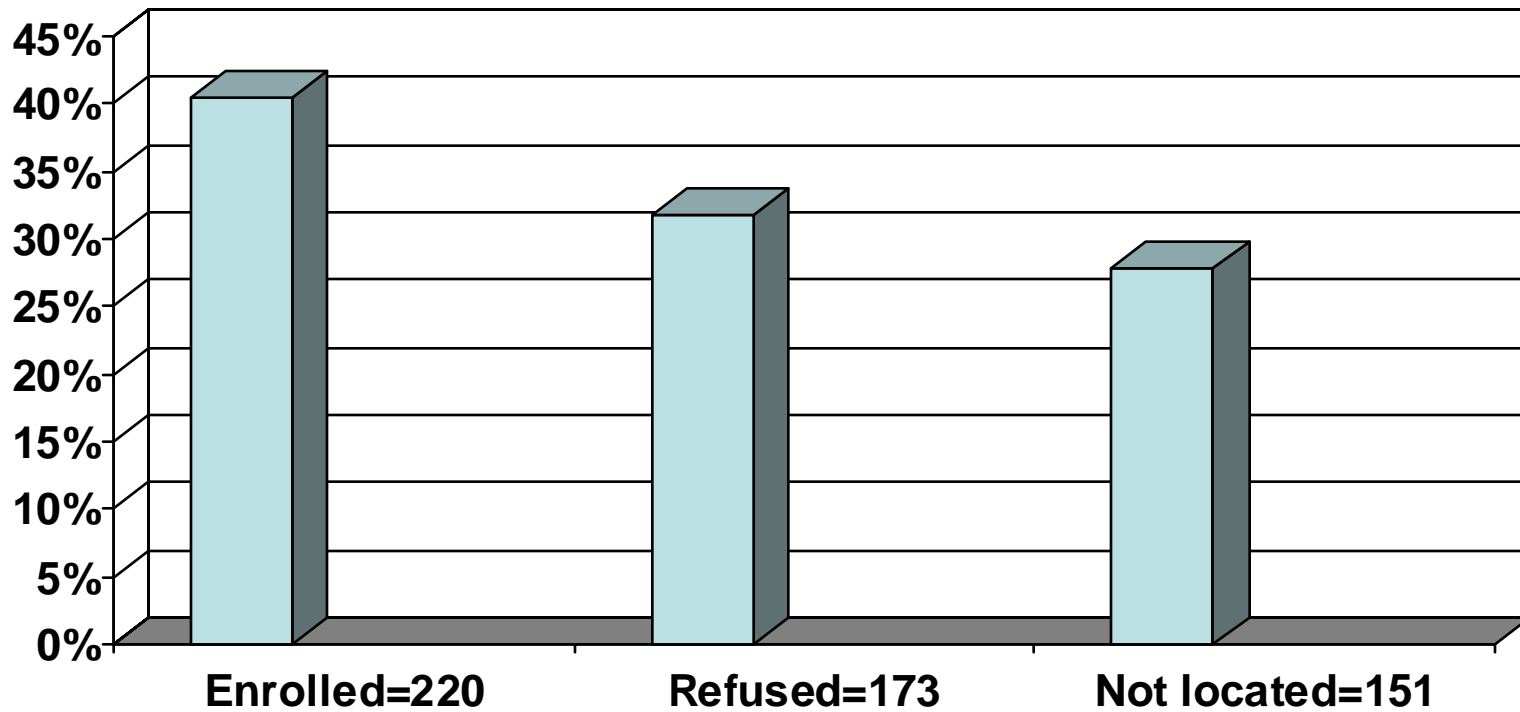Family Medicine and Community Health

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Background

- Little understanding of relationship of depression and diabetes
- Previous and concurrent studies haven't focused on low income, minority populations

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Prior studies

- **2004 Katon et al Group Health Cooperative Study found 11.9% of diabetics positively screen for depression (n=4385)**

- **Depression seems to precede development of Type II diabetes & may be a risk factor (Eaton et al 1997; France & Arie, 2000)**

- **Evidence that patients with depression and diabetes are less compliant with diet and medicine, are higher health care users, and cost more than diabetics without depression (Egede, Zheng & Simpson, 2002;Marcus et al, 1992)**

- **Depression strongly associated with development of diabetic complications including CAD, retinopathy, neuropathy & nephropathy (Harris et all, 2002; De Groot et al, 2001)**

- **Depression associated with poor glycemic control (Lustman et al, 2000; Lustman & Clouse, 2002) & implicated in insulin resistance in nondiabetics (Okamura et al 2000)**

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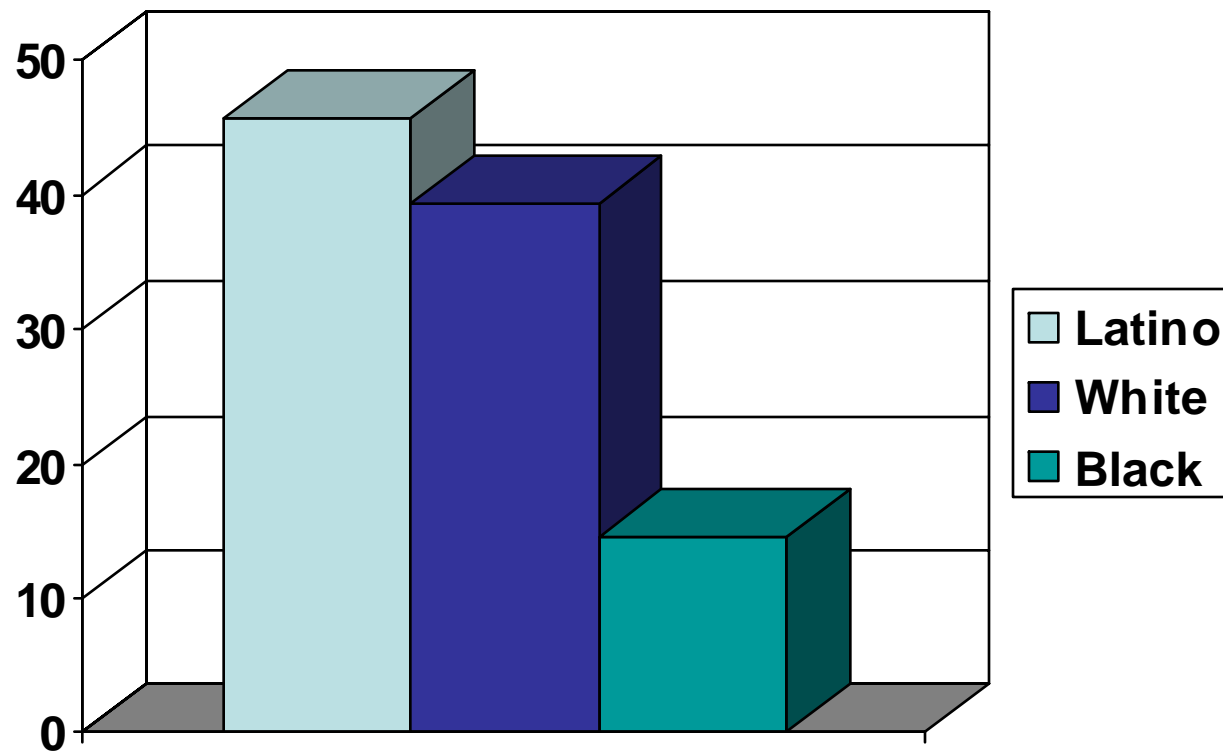HEALTH CARE

Study Population

Characteristics of Sample
N=220 (40% initial sample & 56% contacted)

- 32.7% male
- Mean age=58.9 (10.6)
- 56.4%English-speaking, 41.8%Spanish
- A1c=7.43 (1.7)
- Dys BP=74.4 (10.1)
- Sys BP=126.6 (18.1)
- LDL=101.0(33.0)
- BMI=35.2 (7.6) (n=126)
- Comparing enrolled to refused or not contacted: enrolled more often female, English speaking, higher BMI

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Enrolled Sample: Race

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Measures

- Demographics
- LDL, BP, BMI, A1c (baseline; 6 month follow up for MDD group)
- Self-reported diabetes management compliance (baseline; follow up 3 & 6 month for MDD group)
- SF-8 (baseline; follow up 3 & 6 month for MDD group)
- PHQ-9 (baseline; 3 & 6 month follow for MDD group)
- All measures well established in Spanish and English

Clinical Parameters (means)

- Number years with diabetes: 9.79
- BMI: 35.18 (only 16% below 30)
- Hemoglobin A1C: 7.4 (only 49% at 7 or lower, 16% 6 or lower)
- Diastolic BP: 74.6 (only 4%>90mmHg)
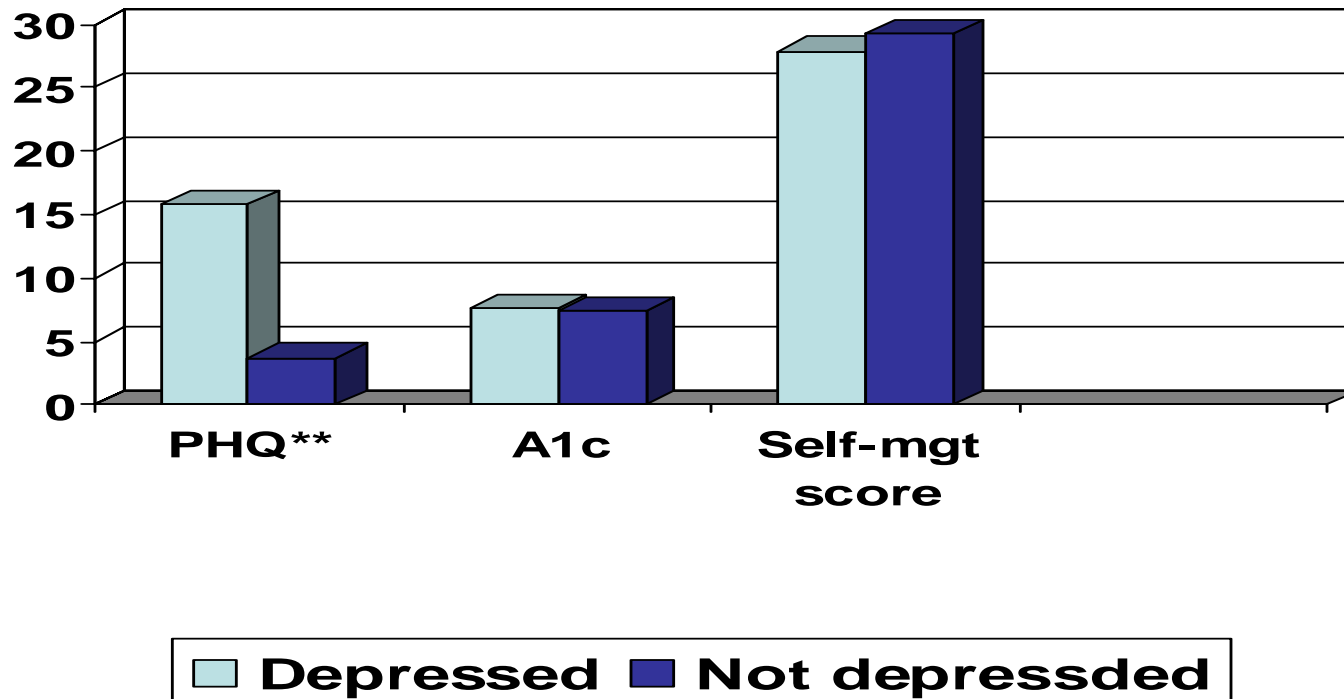- LDL: 100.9 (43% >100)

Baseline Results

- 30.5% symptoms of MDD (based on PHQ-9 score of 10+ or SF8 score on emotional items of 3+*

- Additional 18% receiving current treatment for depression=43% sample with current depression symptoms or treatment

- Depression not significantly associated with higher A1c

*(sensitivity for SF8 items to predicting cut off PHQ score was 89%, specificity 73%)

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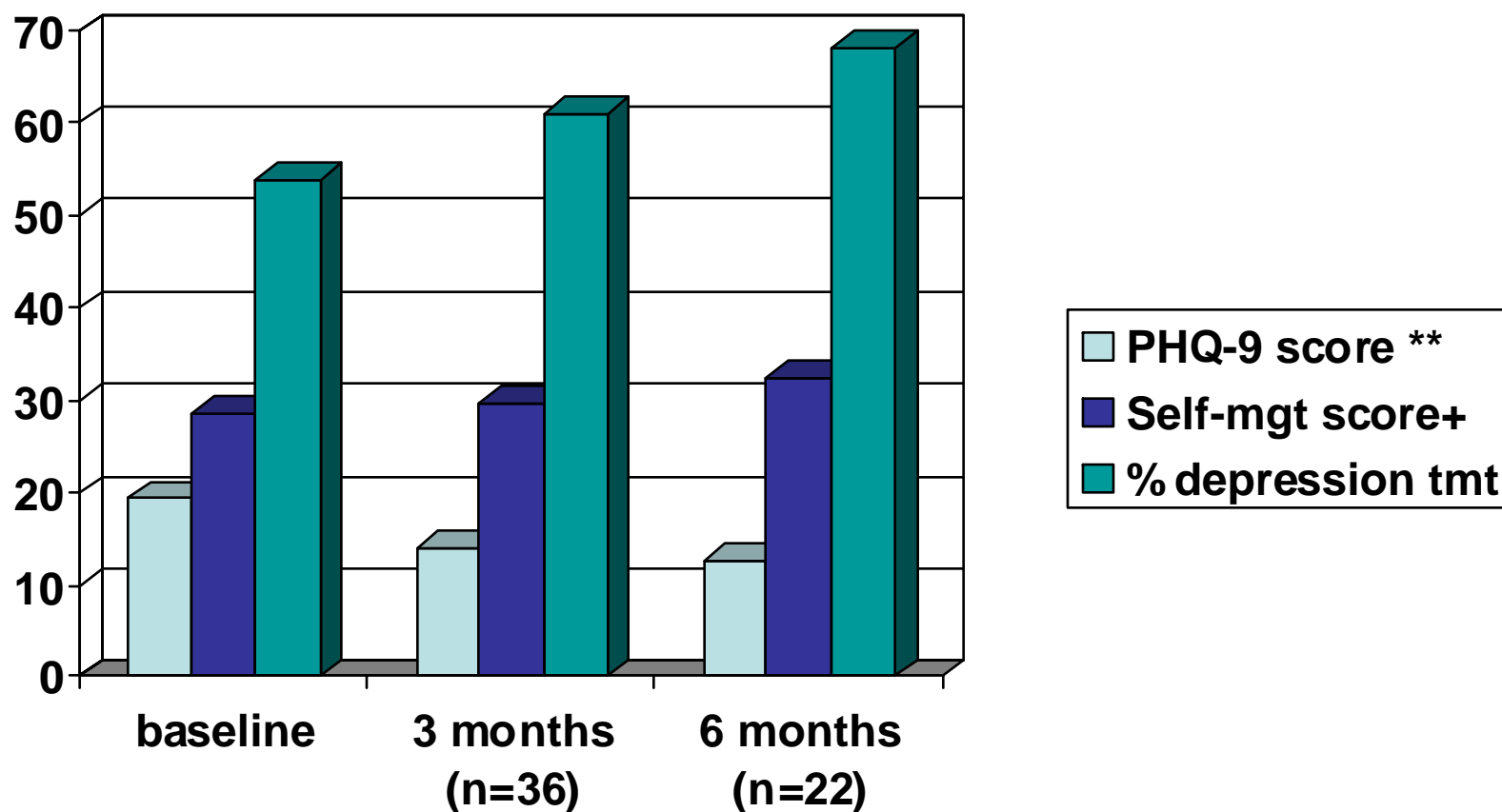
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Baseline Results (cont)

- Depression associated significantly with:
  - Spanish ethnicity
  - Medicaid insurance
  - poorer self-reported health
  - more self-reported limitations on work and social activities
  - more pain
  - less energy
- Only in multivariate analysis controlling for ethnicity and insurance do depression symptoms negatively associate with self-management

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Baseline measures comparing those with and without depression/emotional problems

Legend: ☐ Depressed ☐ Not depressded

X-axis: PHQ**, A1c, Self-mgt score

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Patient Outcomes: Those referred for depression treatment n=39

Conclusions

- Rates of depression in our sample are 2.5 times that found in commercial populations
- Significant quality of life detriments for those reporting depressive symptoms
- Higher rates of depression are found among Latino patients
- No evidence that depression is associated with poorer glycemic control or most other physiological measures
- Some evidence that depression is associated with poorer self-management
- Depression treatment improves depression symptoms and there is some association with improved diabetic self-management

What does this mean?

- Many patients with were already being treated for depression which may explain lack of health differences

- Patients were also younger than those in other studies

- Perhaps it takes time for depression to begin to impact glycemic control

- Is A1c a good measure of diabetes management?

- Evidence of some poorer areas of self-management suggests that targeted intervention around diet and exercise may be important

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Limitations

- ## Small pilot study so:
  - Lack of resources & time to locate patients although sample fairly representative of group randomly drawn from diabetes registries
  - Couldn't follow all patients with depression/emotional problems for 6 months-just those with moderate to severe levels
  - Couldn't pay for treatment or labs

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