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Primary Care-OT for Older African Americans with Diabetes and Mild Cognitive Impairment: Intervention Approaches and Case Stories

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**Background**

- Prevalence of Type 2 diabetes (DM) in older persons is rapidly increasing.
- DM increases the risk for Mild Cognitive Impairment (MCI), which is a transition state between normal cognition and dementia that is often characterized by memory and executive function deficits.
- Cognition deficits reduce adherence to DM medications, which worsens glycemic control and increases the risk for adverse DM-related health outcomes.
- Improving medication adherence may prevent these outcomes & reduce health care costs.
- Older African Americans have twice the rate of DM, worse cognitive function, lower medication adherence, and worse glycemic control than whites.
- One million older African Americans now have DM and their number will double by 2030.
- Because 30% also have MCI, low medication adherence is an important problem.
- There is a need for culturally relevant interventions that compensate for cognitive deficits and improves medication adherence and glycemic control.

**Purpose:**

To test the efficacy of a collaborative intervention to lower hemoglobin A1c levels (HbA1c) in older African Americans with Type 2 diabetes (DM), Mild Cognitive Impairment (MCI), and suboptimal medication adherence and glycemic control.

**Aims:**

1. To reduce HbA1c level by 0.5% at 6 and 12 months.
2. To increase MEMS-measured adherence to an oral DM medication at 6 and 12 months.

**Hypotheses:**

1. Fifty-five percent of intervention participants, compared to 25% of control participants, will have a reduction in HbA1c of 0.5% at 6 months (short term effect) and 12 months (maintenance effect).
2. The Primary Care-Occupational Therapy intervention will increase MEMS-measured adherence to a greater extent than enhanced usual care at 6 and 12 months.

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**Home-based Primary Care-OT (PC-OT) Intervention**

**Behavioral Activation**

- **Technique:** To help people overcome avoidant tendencies through goal-setting, activity scheduling, and graded task assignment.

**Key components:**

1. Developing an Action Plan based on goals.
3. Reinforcing the steps towards goal attainment.

**Ocational Therapy**

- Ance fundamental cognitive, motivational, behavioral, & social factors, tailored to the home environment.
- Helps to maintain medication adherence and DSM and maintain treatment plan.
- Delivers OT treatment and MCI interventions using principles of Behavioral Activation.
- Inform PCP of assessment needs, goal & plan, patient concerns & successes.

**Primary Care**

- Deliver primary care services as necessary.
- Inform the medical and the site of health status including medical orders, health conditions, medications.
- Collaborate with occupational therapy on Electronic Health Record (EHR).

**Flow Chart & Study Design**

**Randomized controlled trial (RCT) stratified by baseline HbA1c level.**

**Intervention:** Primary Care-Occupational Therapy (PC-OT)

**Control:** Enhanced Usual Care (EUC); usual medical care plus low intensity Diabetes Self-Management (DSM) education, delivered by community healthcare worker.

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**Baseline Data (N = 101)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistic</th>
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<tbody>
<tr>
<td>Age</td>
<td>Years M [SD]</td>
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<tr>
<td>Gender</td>
<td>Male n (%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married n (%)</td>
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<tr>
<td>Marital Status</td>
<td>Widowed n (%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Divorced n (%)</td>
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<tr>
<td>Marital Status</td>
<td>Separated n (%)</td>
</tr>
<tr>
<td>Education</td>
<td>&lt;12 years n (%)</td>
</tr>
<tr>
<td>Education</td>
<td>12 years n (%)</td>
</tr>
<tr>
<td>Education</td>
<td>&gt;12 years n (%)</td>
</tr>
<tr>
<td>Living Status</td>
<td>Lives alone n (%)</td>
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<tr>
<td>Living Status</td>
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<tr>
<td>PHQ-8*</td>
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<td>PHQ-8*</td>
<td>&gt;10 score n (%)</td>
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<tr>
<td>MetS†</td>
<td>Score M [SD]</td>
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<tr>
<td>HbA1c</td>
<td>Blood Sugar Level M [SD]</td>
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<tr>
<td>HbA1c</td>
<td>Medication Adherence* % (days per 2 weeks)</td>
</tr>
<tr>
<td>HbA1c</td>
<td>Medication Adherence* % (days per 2 weeks)</td>
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**References**