



Inside the Black Box: Deconstructing Social and Peer Support

How Peer Support Improved Physical Activity Despite Pain

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Disclosures

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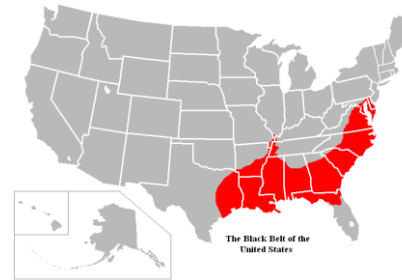
Background

- Chronic pain: up to 70% of individuals living with diabetes
- Chronic pain associated with depression, stress
- Many pain medications: poorly suited for diabetes
- Cognitive behavioral therapy:
 - Nonmedical approach
 - Works in several chronic pain conditions (osteoarthritis, irritable bowel, fibromyalgia)



Background

- Alabama Black Belt:
 - Poor
 - Mostly African Americans
 - Rural
 - Few medical resources – especially mental health
 - Peer coaching program



Rahman A, Malik A, Sikander S, Roberts C, Creed F. Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. *The Lancet* 2008;372(9642):902-9.



Background

- Alabama Black Belt:
 - Poor
 - Mostly African Americans
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 - Few medical resources – especially mental health
 - Peer coaching program
- Pakistani Lady Health Worker Thinking Healthy program
 - RCT of cognitive behavior training to prevent depression
 - 50% reduction in post-partum depression

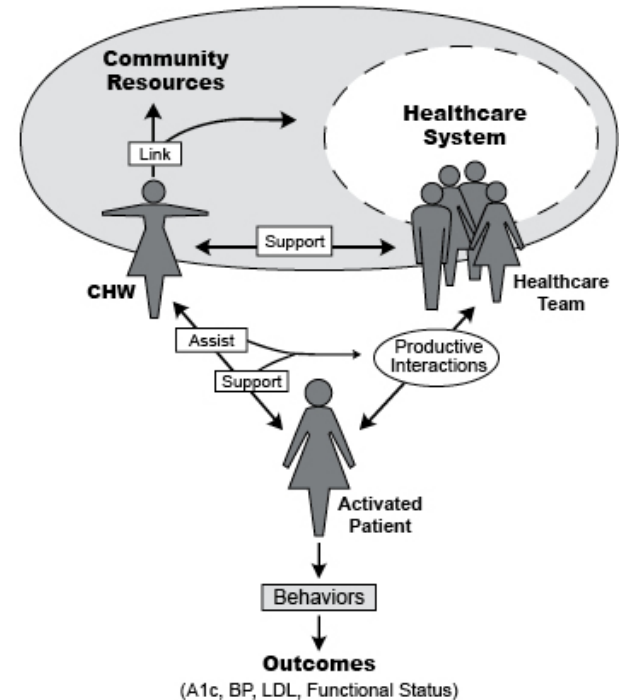


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Community Health Workers (CHW)

- Peer support effective in improving health behaviors in patients with chronic conditions¹⁻⁴
- CHWs:
 - Link community, health care system
 - Understand challenges of day-to-day management of diabetes
 - Develop realistic, feasible strategies; provide social and emotional support

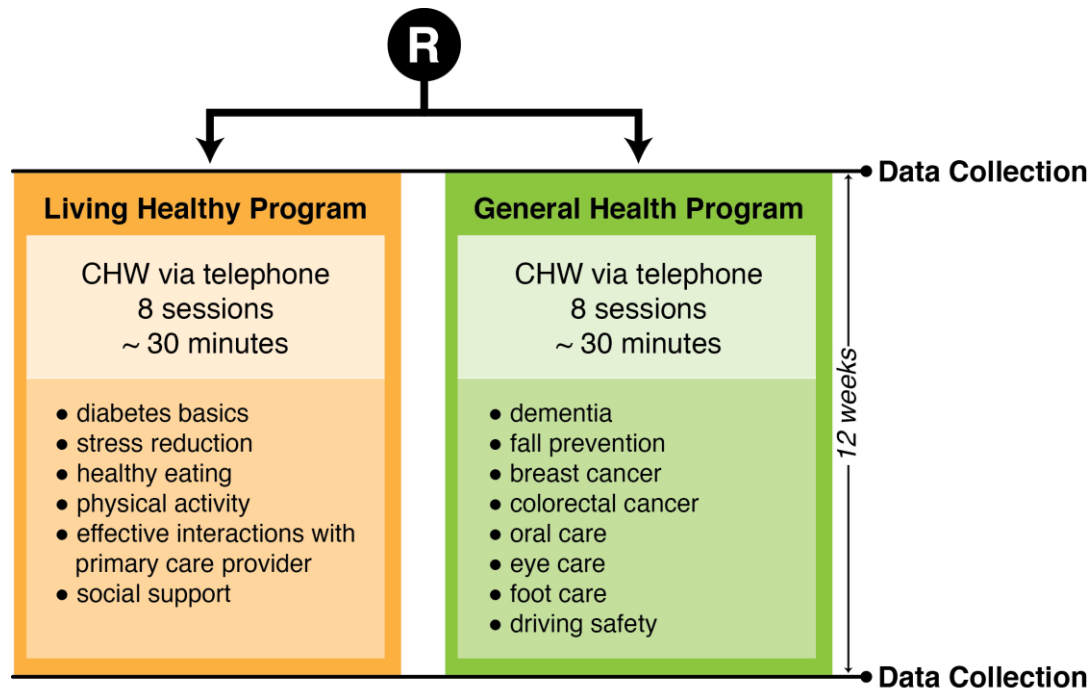


1. Piette JD, Resnicow K, Choi H, Heisler M. A diabetes peer support intervention that improved glycemic control: mediators and moderators of intervention effectiveness. *Chronic illness*. 2013;9:258-67.
2. Tang TS, Funnell M, Sinco B, Piatt G, Palmisano G, Spencer MS, et al. Comparative effectiveness of peer leaders and community health workers in diabetes self-management support: results of a randomized controlled trial. *Diabetes care*. 2014;37:1525-34.
3. Thom DH, Ghorob A, Hessler D, De Vore D, Chen E, Bodenheimer TA. Impact of peer health coaching on glycemic control in low-income patients with diabetes: a randomized controlled trial. *Annals of family medicine*. 2013;11:137-44.
4. Heisler M, Vijan S, Makki F, Piette JD. Diabetes control with reciprocal peer support versus nurse care management: a randomized trial. *Annals of internal medicine*. 2010;153:507-15.



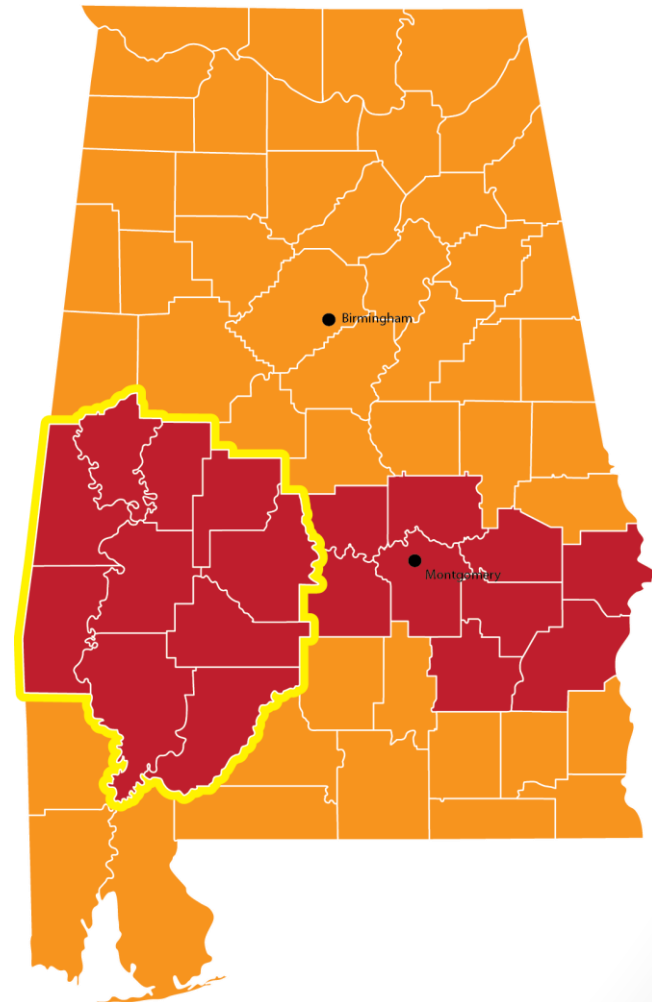
Study Hypothesis and Design

- Hypothesis: A telephone-delivered CBT-based program delivered by CHW can improve pain, physical functioning, and quality of life in individuals with diabetes and chronic pain.
 - Here: physical activity despite pain
- Study Design: Community-based, cluster randomized controlled pragmatic trial



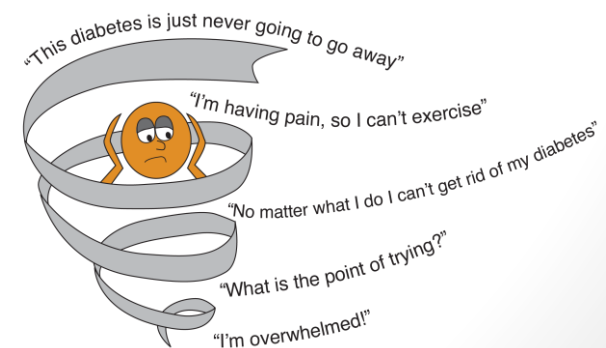
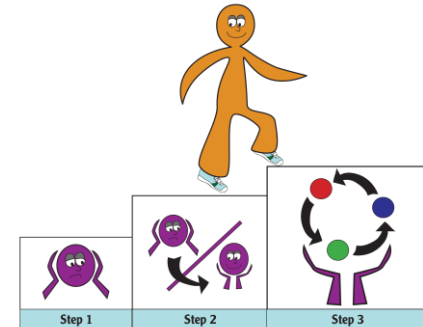
Study Recruitment

- **Recruitment Strategies**
 - Chain referral sampling technique¹
 - Community coordinators/CHW presented study to community
 - Announcements on local radio stations and newspapers
 - Posters in doctors offices, churches, libraries, stores, community meeting locations
- Individuals with diabetes, chronic pain, under care of primary care doctor



Program Description

- Adaptation of the *Thinking Healthy Program* CBT-based intervention delivered by CHWs¹
- Activities designed to:
 - Develop adaptive coping skills
 - Facilitate cognitive reframing
 - Provide social support
- Behavioral goals around stress reduction, healthy eating, physical activity, social support, positive interactions with MD
 - Emphasis on developing alternative exercise strategies for days experiencing pain
 - Experienced CHW, 3-month training
 - Motivational interviewing

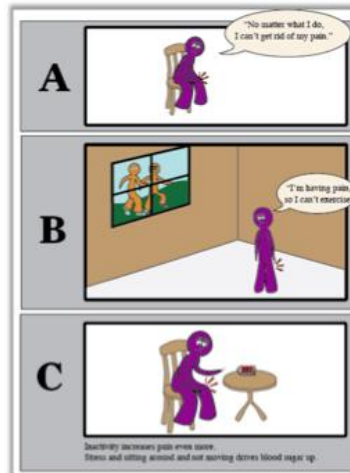


Intervention Format

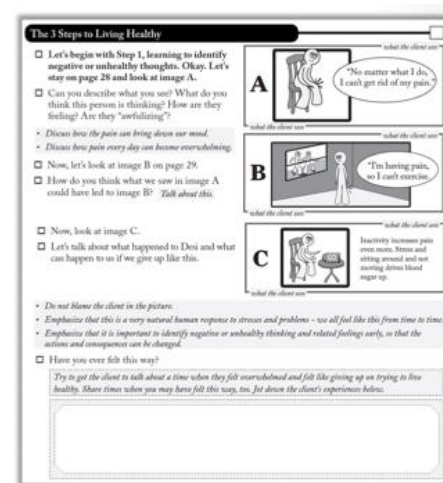
Participant
Watches
Session Video



Participant and
CHW Complete
Phone Session



Participant Activity Book



CHW Manual

Daily Monitoring
and Homework

Session 7 - Week 1 of 4

Pain					Mood				
1 no hurt	2 hurts little bit	3 hurts little more	4 hurts even more	5 hurts whole lot	1 excellent	2 very good	3 good	4 fair	5 poor
Day 1 (today)					Day 1 (today)				
Pain: 1 2 3 4 5 Mood: 1 2 3 4 5					Exercise Goal: <input type="checkbox"/> Negative Thought: <input type="checkbox"/> Positive Thought / Action: <input type="checkbox"/> Healthy Eating Goal: <input type="checkbox"/> Deep Breathing: <input type="checkbox"/>				
Day 2					Day 2				
Pain: 1 2 3 4 5 Mood: 1 2 3 4 5					Exercise Goal: <input type="checkbox"/> Negative Thought: <input type="checkbox"/> Positive Thought / Action: <input type="checkbox"/> Healthy Eating Goal: <input type="checkbox"/> Deep Breathing: <input type="checkbox"/>				



Study Outcomes

- **Depressive symptoms:**
 - Centers for Epidemiology Studies Depression (CES-D)
 - 11 items, score 0-22, Cronbach's alpha 0.81
 - ≥ 9 score associated with moderate or greater depression
- **Stress:**
 - Cohen's Perceived Stress scale
 - 10 items, score 0-40, Cronbach's alpha 0.78



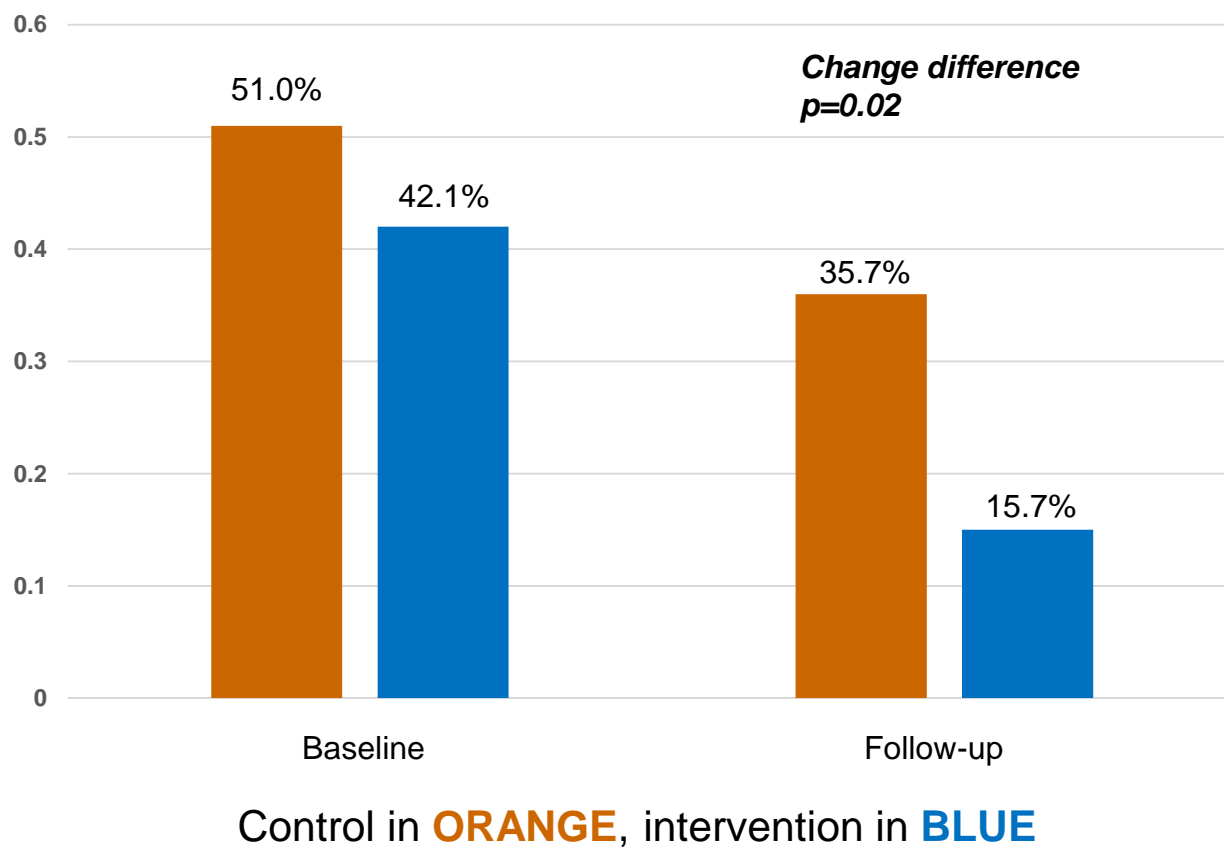
Results: Participant Characteristics

	ALL N=193	Intervention n=98	Control n=95	p
Age, mean, SD	59.2 ± 10.2	60.1 ± 9.9	58.3 ± 10.5	0.24
Female, %	79.7	84.1	75.0	0.14
Race, %				0.65
African American	95.9	96.6	95.2	
Caucasian	4.1	3.4	4.8	
Education, %				0.50
< High School (HS)	36.0	31.8	40.5	
GED, HS, 12 th Grade	30.8	33.0	28.6	
> HS	33.1	35.2	31.0	
Total Annual Income, %				0.62
<\$10,000	32.6	33.0	32.1	
\$10,000-30,000	36.6	39.8	33.3	
>\$30,000	22.1	18.2	26.2	
Not reported	8.7	9.1	8.3	
Insulin use, %	44.8	39.8	50.0	0.18



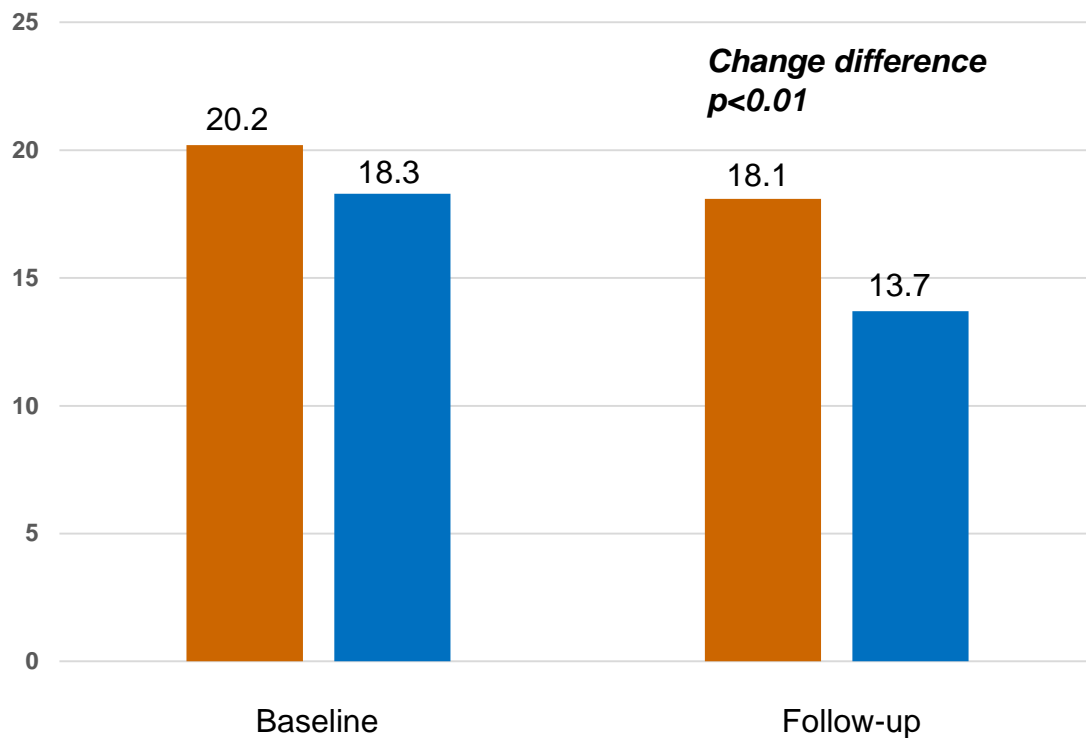
Results: Depressive symptoms

Proportion at risk for moderate or greater depression (CES-D ≥ 9)



Results: Stress

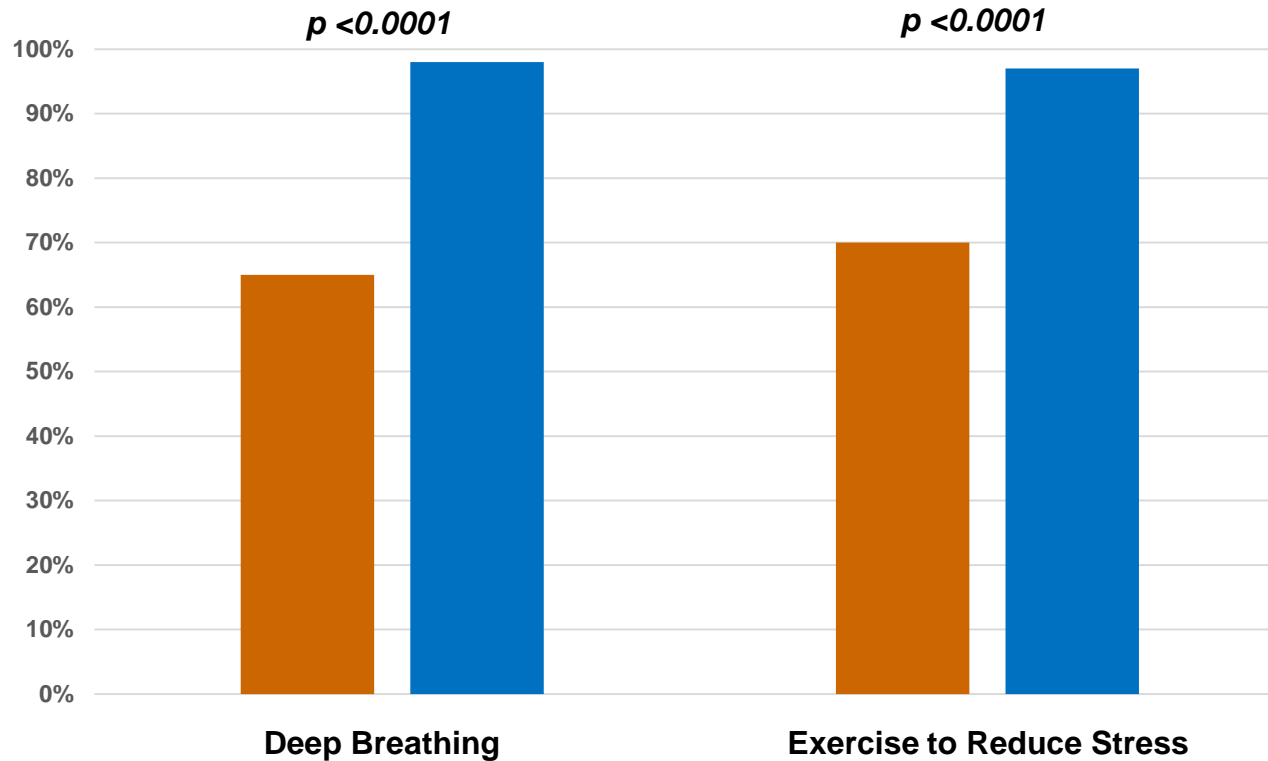
Cohen's Perceived Stress scores at baseline and follow-up (range 0-40, higher = more stress)



Control in **ORANGE**, intervention in **BLUE**



Results: Use of stress reducing techniques assessed at follow-up



Control in **ORANGE**, intervention in **BLUE**



Limitations

- Self-reported measures, no clinical diagnosis
- Included mostly African American women from one geographic area
- Short duration of intervention



Conclusions

- Peer-delivered telephonic CBT dramatically improved depressive symptoms and reduced stress in diabetic individuals with chronic pain living in this under resourced community
- Findings were attributable in part to greater use of stress reducing techniques (deep breathing, exercise)
- No medications used to achieve these results



Living Healthy Study Team

- Monika Safford, Susan Andreae, Laurence Bradley, Andrea Cherrington, Michelle Martin, Joshua Richman, Adrianna Addison, Susan Andreae, Lynn Andreae, Debra Clark, Ethel Johnson, Marquita Lewis, Sheree Moultry, Ashruta Patel, LaKendra Piper, Ebony Townsend, Allyson Varley
- Community health workers: Brenda Autry, Allison Davis, Lizzie Ingram, Maggie Jolly, Gail Kania, Angela Martin, Ada Nettles, Aundretta Montgomery, Anita Powell, Alisha Smith

