The Effect of a Lifestyle Intervention on Psychosocial Factors and Medication Adherence in African Americans with Metabolic Syndrome

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Introduction

- African Americans (AAs) continue to suffer disproportionately from CVD morbidity and mortality.
- CVD risk factors of obesity, hypertension (HTN), insulin resistance, and hyperlipidemia, components of Metabolic syndrome (METS) affect AAs at higher rates when compared to Caucasians.
- Lifestyle, psychosocial status and adherence to treatment are factors relating to worse CVD outcomes.
- A culturally sensitive lifestyle intervention (LSI) focusing on health behaviors was evaluated for effects on psychosocial factors and medication adherence.

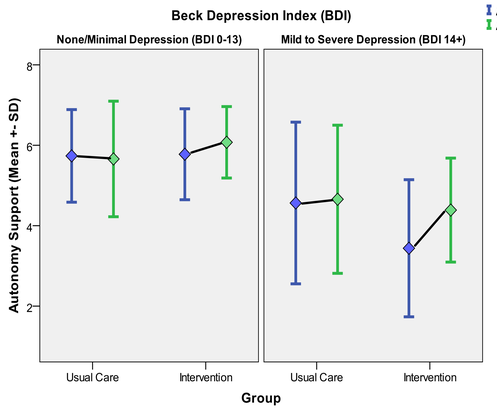
Aims

To determine if participants who receive the LSI intervention demonstrate improved health behaviors, clinical outcomes, and psychosocial factors.

Methods

- **Sample** (N=120)
  - AA Participants recruited from an urban primary care center with METS and HTN in the metro Atlanta area.
- **Culturally sensitive self-management Lifestyle Intervention**
  - LSI group evaluated for improved health behaviors and psychosocial factors over those randomized to the UC group.
  - LSI groups included four focus group sessions occurring over a 2-month time frame.
  - Focus areas were physical activity, diet, medication adherence, and 10-weekly phone counseling sessions.
- **Variables and Measures**:
  - Clinical and demographic data
  - Medication Adherence (Hill Bone Survey [HB])
  - Depression (Beck Depression Inventory-II [BDI-II])
  - Autonomy Support (Autonomy support tool [AST])
- **Statistical Analysis**
  - Correlation matrix, Paired t-test, ANCOVA

Results



Correlation Matrix

Variables		1	2	3	4	5	6	7	8	9	10	11
Age	r	1.000	-.181	-.221*	-.018	.056	.150	-.006	.016	.004	.001	-.066
	P value	.	.057	.044	.855	.614	.115	.955	.867	.965	.988	.480
Hill Bone medication BL	r	-.181	1.000	.692**	-.113	-.165	.068	.161	.166	.226*	.016	.046
	P value	.057	.	.000	.239	.143	.478	.155	.085	.017	.864	.636
Hill Bone medication Post	r	-.221*	.692**	1.000	-.160	-.361**	.118	.132	.168	.284*	.147	.013
	P value	.044	.000	.	.158	.001	.302	.236	.145	.011	.184	.911
Autonomy Support BL	r	-.018	-.113	-.160	1.000	.662**	-.418*	-.432**	-.551**	-.396**	.054	-.097
	P value	.855	.239	.158	.	.000	.000	.000	.000	.000	.574	.322
Autonomy Support Post	r	.056	-.165	-.361**	.662**	1.000	-.308**	-.435**	-.370**	-.337**	.077	-.067
	P value	.614	.143	.001	.000	.	.006	.000	.001	.002	.489	.553
BDI Score BL	r	.150	.068	.118	-.418**	-.308**	1.000	.540**	.306**	.584**	.045	-.020
	P value	.115	.478	.302	.000	.006	.	.000	.001	.000	.640	.839
BDI Total Score Post	r	-.006	.161	.132	-.432**	-.435**	.540**	1.000	.336**	.259*	-.117	.105
	P value	.955	.155	.236	.000	.000	.000	.	.003	.021	.290	.350
FEICS perceived criticism score BL	r	.016	.166	.168	-.551**	-.370**	.306**	.336**	1.000	.420**	-.096	.100
	P value	.867	.085	.145	.000	.001	.001	.003	.	.000	.322	.310
Perceived stress BL	r	.004	.226*	.284*	-.396**	-.337**	.584**	.259*	.420**	1.000	-.037	-.057
	P value	.965	.017	.011	.000	.002	.000	.021	.000	.	.703	.558

T-Test Group Differences BL to 6M

	Usual Care			Intervention			
Variables	**M**	**SD**	**t-statistic**	**M**	**SD**	**t-statistic**	**p value**
AST	.03	.91	.24	-.41	.90	-2.9	<.01
BDI	2.0	7.1	1.8	.90	8.3	.68	.50
HB (Meds)	.00	2.2	.00	.28	3.1	.55	.58

- The higher depression subjects – specifically the intervention subjects had the highest increase in AST from BL to 6m while the more depressed usual care subjects remained unchanged.
- After adjusting for AST BL, group differences at 6M ($F_{(1,76)}$=5.21, p=.025) remained significant.
- While AST was related to BDI at BL and 6M (r= -.418, p=.00; -.432, p=<.001) and AST 6M and HB 6M (r=-.361, p<.05) no LSI effects on depression or medication adherence were observed.

Participant Characteristics

Characteristic (N=120)	N, mean	% [SD]
Age	50	[8.6]
Male **Female**	27 93	22.5% 77.5%
BMI **BL** **Post**	 36.5 36.6	 [6.7] [7.3]
Education **HS/GED/Tech** **College**	 32 84	 26.7% 70%

Characteristic (N=120)	N, mean	% [SD]
SBP (BL)	128	[14.5]
SDP (BL)	80.4	[10.8]
SBP (Post)	128	[14.2]
SDP (Post)	80	[9.9]
Waist-to-Hip Ratio **Males** **Females**	 0.95 0.88	 [.05] [.08]

Conclusions

- Devising culturally tailored interventions targeting SM behaviors while addressing psychosocial factors improved autonomy support.
- Improvement of psychosocial factors such as depressive symptoms may be important in managing their chronic illness.
- Participants self-rated their medication taking as adherent reducing the ability of the LSI to create a direct effect.

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