SUPPLEMENTAL RESULTS

We observed that **t**he prevalence of obesity by race/ethnicity in the overall unselected population (n=668) was 16.9% (95% CI: 25.77 to 32.80) in non-HW and 40.2% (35.1 to 45.4) in AA. In turn, the prevalence of obesity in the State of Alabama general female population the study was available for 2001 as 20.0% for non-HW and 35.0% for AA females aged ≥20 years (**16, 17**). The prevalence of overall obesity for our entire unselected population (29.2% [95% CI: 25.77 to 32.80] was similar to the estimates in the Jefferson County (State of Alabama) during the period of study (24.5 – 26.5 %), based on 1995 to 2000 BRFSS obesity data on Alabama general population (**16, 17**).

Race-specific estimates of prevalence of obesity for referral PCOS, unselected PCOS and unselected controls are presented in **Supplemental Table 1.** Estimates for the prevalence of severe obesity in the overall unselected population (n=668) by race/ethnicity this prevalence was 3.8% (95% CI: 1.9 to 6.7) and 11.4% (8.3 to 15.1) in non-HW and AA, respectively. Estimates for the prevalence of severe obesity were not available for the State of Alabama during the period of study.

The prevalence of obesity in non-HW and AA referral PCOS women was 3.7-fold and 1.8- fold greater (p<0.0001), respectively, than estimates for the same in the overall unselected population, and 3.1-fold and 2.1-fold greater (p<0.0001), respectively, than the estimates for the State of Alabama for the same time period. Alternatively, the prevalence of obesity in unselected PCOS women and unselected controls by race/ethnicity were similar to the prevalences in the overall unselected population and for general adult female population in the State of Alabama (**Fig. 3**).

The prevalence of severe obesity in the referral PCOS cohort was 3 to 4-fold greater than the estimates in the overall unselected population by of race (**Supplemental Table 1**). Alternatively, the prevalence of severe obesity in unselected controls was similar to the estimates in the overall unselected population, and higher in AA subjects. The prevalence of severe obesity in the unselected PCOS by race/ethnicity was not compared with the estimates in unselected general population because of small sample size.

					Androgen levels*[f]				Hirsutism (%)	Hyperandrogenemia (%)			Prevalence of obesity	
Study Group	Race	Age (years)*	BMI (kg/M²)*	mFG score*	DHEAS (ng/mL)	Total T (ng/dl)	Free T (ng/dl)	SHBG* (nmol/L)	mFG score ≥6	DHEAS (>2459 ng/mL)	Total T (>84.70 ng/dl)	Free T (>0.75 ng/dl)	General n (%)	Severe n (%)
Referral PCOS	**All**	**27.4±0.4**	**34.5±0.6** [a]	**8.0±0.3** [a]	**1948 (92-6692)** [a]	**77.9 (14.0-586.0)** [a]	**0.83 (0.10-4.09)** [a]	**164 (100-670)** [a]	**72.3** [d]	**35.7** [d]	**39.0** [d, e]	**64.0** [a]	**186 (63.7%)** [a]	**81 (27.7%)** [a]
	non-Hispanic White	27.5±0.5	34.3±0.6 [a]	7.7±0.3 [a]	1970 (92-6692) [a]	79.1 (16.0-585.0) [a]	0.83 (0.10-4.09) [a]	164 (100-670) [a]	70.6 [d]	38.1 [d]	39.6 [a]	64.9 [a]	153 (62.5%) [a]	66 (26.8%) [a]
	African Americans	27.6±1.1	35.9±1.3 [a]	[g]9.4±0.6 [a]	1821 (311-4876) [a]	77.2 (15.0-144.0) [a]	0.80 (0.24-1.70) [a]	166 (100-370) [a]	79.6 [d]	25.0	34.1 [a]	64.3 [a]	32 (72.7%) [a]	15 (34.4%) [a]
Unselected PCOS	**All**	**27.4±0.7**	**27.6±1.0**	**5.7±0.5** [c]	**1726 (231-5473)** [b]	**59.5 (11.0-160.0)** [b]	**0.46 (0.05-1.91)** [b]	**233 (70-820)** [c]	**65.6** [b]	**34.4** [b]	**18.0** [b]	**24.1** [b]	**18 (28.1%)**	**7 (10.9%)**
	non-Hispanic White	28.2±1.2	27.0±1.7	4.5±0.7 [c]	1859 (659-4913) [b]	63.5 (38.0-160.0) [b]	0.45 (0.16-1.80) [b]	247 (70-580) [c]	55.2 [b]	34.5 [b]	17.2 [b]	20.7 [b]	8 (27.6%)	4 (13.8%)
	African Americans	26.9±0.9	28.3±1.3	[g]6.7±0.8 [c]	1574 (231-5473) [b]	56.0 (11.0-160.0) [b]	0.45 (0.05-1.91) [b]	222 (110-820) [c]	73.5 [b]	32.3 [b]	19.4 [b]	28.6 [b]	10 (29.4%)	3 (8.8%)
Unselected Controls	**All**	**29.3±0.3**	**27.3±0.3**	**1.1±0.1**	**897 (70-9460)**	**44.5 (4.0-123.0)**	**0.29 (0.02-1.15)**	**292 (100-5800)**	**2**	**2.6**	**2.5**	**5.1**	**160 (28.4%)**	**42 (7.5%)**
	non-Hispanic White	28.5±0.4	24.9±0.4	0.9 ±0.1	922 (70-9460)	46.03 (8.0-123.0)	0.27 (0.03-1.15)	328 (100-1590)	2.4	5.4	1.6	4.0	39 (15.4%)	7 (2.8%)
	African Americans	29.9±0.4	29.6±0.5 [f]	1.3±0.1 [g]	856 (85-3708)	43.19 (4.0-120.0)	0.32 (0.02-1.11) [h]	260 (120-580) [i]	1.7	5.5	3.5	6.4	120 (40.8%) [f]	35 (11.9%) [f]

Abbreviations: BMI is body mass index, DHEAS is dehydroepiandrosterone sulfate, mFG score is the modified Ferriman-Gallwey hirsutism score, Oligo is oligo/anovulation, SHBG is sex hormone-binding globulin, T is testosterone.

Values depicted are means ±SE.

[f] *The geometric mean, the antilog of the log scale mean, is reported for log-transformed data.*

[a] *p<0.0001 (Referral PCOS different than all others)*

[b] *p<0.0001 (Unselected PCOS vs. unselected controls only)*

[c] *p<0.001 (Unselected PCOS vs.unselected controls only)*

[d] *p<0.0001 (Referral vs. unselected controls only)*

[e] *p<0.001 (Referral vs. unselected PCOS)*

[f] *p<0.0001 (BMI, prevalence of obesity in AA > non-HW in unselected control only)*

[g] *p<0.05 (mFG score in AA > non-HW in all the three groups)*

[h] *p<0.05 (Free T in AA > non-HW in unselected control only)*

[i] *p<0.001 (SHBG in AA < non-HW in unselected control only)*

Table 1. Comparison of study populations

	Referral PCOS	Unselected PCOS	Unselected Controls
No. of total group (%)	292	64	563
Mean Age (years)	27.44±0.44	27.43±0.73	29.25±0.30
No. of non-Hispanic White (%)	245.0 (83.9%) [a]	29.0 (45.3%)	254.0 (45.0%)
No. of African American (%)	44.0 (22.9%) [a]	34.0 (53.1%)	299.0 (52.9%)
Mean BMI (kg/M^2)	34.50±0.55 [a]	27.58±1.01	27.27±0.31
Prevalence of Obesity (%)	186.0 (63.7%) [a]	18.0 (28.1%)	160.0 (28.4%)
Hirsutism (mFG) score	8.01±0.26 [a]	5.73±0.52 [c]	1.09±0.07
Total T (ng/dL)[*]	77.9 (14.0-586.0) [a]	59.5 (11.0-160.0) [b]	44.5 (4.0-123.0)
Free T (ng/dL)[*]	0.83 (0.10-4.09) [a]	0.46 (0.05-1.91) [b]	0.29 (0.02-1.15)
DHEAS (ng/ml)[*]	1948 (92-6692) [a]	1726 (231-5473) [b]	897 (70-9460)
SHBG (nmol/L)[*]	164 (100-670) [a]	233 (70-820) [c]	291 (100-5800)
Hirsutism (mF-G ≥6; %)	72.3% [d]	65.6% [b]	2.0%
Total T (%)	39.0% [a]	18.0% [b]	2.5%
Free T (%)	64.0% [a]	24.1% [b]	5.1%
DHEAS (%)	35.7% [d]	34.4% [b]	2.6%
PCOS subphenotypes			

Hirsutism+Oligo only (%)	58.0 (19.9%) [a]	29.0 (45.3%)	N/A
HA+Oligo only (%)	80.0 (27.4%)	22.0 (34.4%)	N/A
Hirsutism+HA+Oligo only (%)	154.0 (52.7%) [a]	13.0 (20.3%)	N/A

Values depicted are means ±SE.

*Geometric mean, the antilog of the log scale mean, is reported for log-transformed data.

Abbreviations: BMI is body mass index, DHEAS is dehydroepiandrosterone sulfate, HA is hyperandrogenemia, mFG score is the modified Ferriman-Gallwey hirsutism score, Oligo is oligo/anovulation, SHBG is sex hormone-binding globulin, T is testosterone,

[a]p<0.0001 (Referral different from all others)

[b]p<0.0001 (Unselected PCOS different from unselected controls)

[c]p<0.001 (Unselected PCOS different from unselected controls)

[d]p<0.0001 (Referral PCOS different from unselected controls only)

				Table 2. Observed distribution (%) of referral PCOS, unselected PCOS and unselected controls by BMI categories		
BMI categories	Referral PCOS (n=292) n (%)	Unselected PCOS (n=64) n (%)	Unselected Controls (n=563) n (%)	Odds ratios (95% CI) comparing referral PCOS to unselected PCOS	Odds ratios (95% CI) comparing referral PCOS to unselected controls	Odds ratios (95% CI) comparing unselected PCOS to unselected controls
Underweight ($\leq$ **18.9 kg/M^2)**	4.0 (1.4)[a]	3.0 (4.7)	33.0 (5.9)	0.28 (0.05 to 1.99)	0.22 [a] (0.06 to 0.64)	0.79 (0.15 to 2.64)
Normal (**19.0–24.9 kg?M^2)**	48.0 (16.4)[b]	27.0 (42.2)	237.0 (42.1)	0.27 [b] (0.15 to 0.51)	0.27 [b] (0.19 to 0.39)	1 (0.57 to 1.75)
Overweight (**25.0–29.9 kg/M^2)**	54.0 (18.5)	16 (25)	133.0 (23.6)	0.68 (0.35 to 1.39)	0.74 (0.51 to 1.04)	0.68 (0.35 to 1.35)
Obese ($\geq$ **30.0 kg/M^2)**	186.0 (63.7)[b]	18.0 (28.1)	160.0 (28.4)	2.95 [b] (1.02 to 11.68)	4.41 [b] (3.24 to 6.04)	0.99 (0.52 to 1.80)
Obesity by class						

Class I obesity (30.0–34.9 kg/M^2)	48.0 (16.4)	4.0 (6.3)[c]	72.0 (12.8)	1.97 [c] (0.84 to 5.40)	1.34 (0.88 to 2.03)	1.05 (0.52 to 1.98)
Class II obesity (35.0–39.9 kg/M^2)	57.0 (19.5)[b]	7.0 (10.9)	46.0 (8.2)	3.12 (1.34 to 8.44)	2.72[b] (1.76 to 4.24)	1.38 (0.50 to 3.27)
Class III obesity (≥ 40.0 kg/M^2)	81.0 (27.7)[bd]	7.0 (10.9)	42.0 (7.5)	4.47 [d] (2.40 to 8.63)	4.75[b] (3.12 to 7.32)	1.52 (0.55 to 3.64)

[a]$p<0.001$ (Referral PCOS vs. unselected control[underweight BMI])

[b]$p<0.0001$ (Referral PCOS vs. unselected PCOS or unselected control)

[c]$p<0.05$ (Referral PCOS vs. unselected PCOS[mild obesity])

[d]$p<0.01$ (Referral PCOS vs. unselected PCOS [severe obesity])

Table 3. The characteristics of phenotypes of PCOS based on NIH criteria in referral and unselected PCOS						
	Referral PCOS (n=292)			Unselected PCOS (n=64)		
	Hirsutism+ Oligo	HA+Oligo	Hirsutism+ HA+Oligo	Hirsutism+ Oligo	HA+Oligo	Hirsutism+ HA+Oligo
No. of total group (%)	58.0 (19.9%)	80.0 (27.4%)	154.0 (52.7%)	29.0 (45.3%)	22 (34.4%)	13 (20.3%)
Mean Age (years)	30.1±1.0	27.9±0.8	26.2±1.0	29.3±1.0	26.2±1.1	25.5±1.6
No. non-NHW (%)	49.0 (84.5%)	71.0 (88.8%)	125.0 (81.2)	13.0 (44.8%)	13 (59.1%)	3 (23.1%)
No. AA (%)	8 (13.8%)	9.0 (11.3%)	27.0 (17.5%)	16.0 (55.2%)	9 (40.9%)	9 (69.2%)
Mean BMI (kg/m^2)	34.8±1.3[d]	33.5±1.1[c]	34.9±0.7	26.9±1.5	26.9±1.8	30.2±2.3
No. with Obesity (%)	36.0 (62.1%)[c]	48.0 (60.0%)[b]	102.0 (66.2%)[d]	7.0 (24.1%)	6 (27.3%)	5 (38.5%)
mFG score	9.5±0.4[b]	3.1±0.2 [c]	10.0±0.3 [d]	7.9±0.4	1.0±0.3	8.9±1.0
Total T (ng/dL) [*]	53.6 (16.0-83.0)	85.6 (27.0-219.0)	85.4 (14.0-586.0) [a]	46.8 (11.0-74.0)	75.7 (38.0-160.0)	64.1 (29.0-160)
Free T (ng/dL) [*]	0.53 (0.10-0.75)[d]	0.89 (0.30 -1.75)	0.95 (0.24-4.09)[c]	0.28 (0.05 -0.74)	0.70 (0.16-1.80)	0.63 (0.25-1.91)
DHEAS (ng/ml) [*]	1400 (234-2382)	2051 (474-5189)	2149 [b] (92-6692)	1222 (231-2366)	1864 (786-3560	3019 (1145-5473)
SHBG (nmol/L)*	174[d] (100-670)	166 (100-310)	159 (100-430)	308 (100-820)	188 (70 -540)	183 (120-300)

Total T (%)	0.0	34.0 (42.5%)	60.0 (38.7%)	0.0	7/22 (31.8%)	4/13 (30.8%)
Free T (%)	0.0	70.0 (87.5%)[c]	132.0 (85.2%)[d]	0.0	13/22 (59.1%)	4/13 (30.8%)
DHEAS (%)	0.0	23.0 (28.8%)	60.0 (38.7%)	0.0	5/22 (22.7%)	8/13 (61.5%)

Values depicted are means ±SE.

*Geometric mean, the antilog of the log scale mean, is reported for log-transformed

data.

Abbreviations: BMI is body mass index, DHEAS is dehydroepiandrosterone sulfate, HA

is hyperandrogenemia, mFG score is the modified Ferriman-Gallwey hirsutism score,

Oligo is oligo/anovulation, SHBG is sex hormone-binding globulin, T is testosterone,

p-values reflect the comparison of referral PCOS to unselected PCOS across analogous phenotypes

[a]*p<0.05*

[b]*p<0.01*

[c]*p<0.001*

[d]*p<0.0001*