TYPE A BEHAVIOR AND BLACK PHYSICIANS: THE MEHARRY COHORT STUDY

William B. Neser, Dr. PH, John Thomas, MD, Kofi Semenya, PhD,
and D. Johniene Thomas, MSPH
Nashville, Tennessee

A group of 261 black, male physicians was examined for the prevalence of Type A behavior and other sociomedical correlates.

Type A behavior, as measured by the Jenkins Activity Survey (JAS), was collected together with type of practice specialty, blood pressure, weight, and height. Type A behavior tended to vary by physician practice specialty. The job involvement subscale correlated significantly with blood pressure but total JAS and other JAS subscale measurements did not. The job-involvement relationship with blood pressure parallels James's finding in lower socioeconomic status blacks. Type A behavior was not found to be related to hypertension but did tend to favor leanness.

Hypertension is a major cause of cardiovascular disease in this country, particularly in the black population. Hypertension prevalence rates as high as 45 per 100 have been reported in certain black socioeconomic groups.[1] Such high prevalence rates argue for the utmost effort in areas of prevention, risk-factor reduction, and adequate therapy. Additional risk-reduction and intervention strategies could be developed if the coexistence of Type A behavior and hypertension was demonstrated.

The Type A behavior designation was developed to characterize a "coronary prone" behavior and was used as a risk factor to predict clinical coronary heart disease.[2] Initial evaluations of Type A behavior were based upon clinical observations but later were reduced to the self-administered Jenkins Activity Survey (JAS).[3] Type A behavior as measured by JAS is characterized by three general activity areas: striving/competitiveness, speed/impatience, and job involvement. Thus, JAS measures an action-emotion complex exhibited by persons engaged in an achievement struggle[4]; it depicts a person under self-perceived strain. The exploration of Type A behavior in black populations has been limited, and the measurement of Type A together with other sociomedical variables in an adult, black professional population has been lacking (SA James, unpublished data, 1985).

Studies of the relationship between blood pressure and Type A behavior in white populations have shown mixed results.[5-8] The conclusion of a number of reviewers, however, is that white Type A persons exhibit more elevated blood pressure under laboratory or environmental stressors than non-Type A persons.[5-7] The surveys of black populations have been limited to exploration of the relationship between Type A behavior and blood pressure in low socioeconomic groups. In the study conducted by Smith et al,[9] for example, no relationship was found between

From the Meharry Cohort Study, Department of Medicine and Department of Family and Preventive Medicine, Meharry Medical College. Requests for reprints should be addressed to Dr. William B. Neser, Department of Family and Preventive Medicine, Meharry Medical College, 1005 D. B. Todd Blvd, Nashville, TN 37208.

Type A behavior and hypertension among inner-city black women. In view of the known association between coronary artery disease and Type A in white men, it was believed that the relationship between hypertension (a coronary risk factor) and Type A in a high-risk, black professional population merited exploration. There has also been some interest in the possible variation of Type A behavior by practice specialty (SA James, unpublished data, 1985). The results presented in this article pertain to JAS-measured Type A behavior, blood pressure, obesity, and practice specialty.

MATERIALS AND METHODS

As previously reported, the Meharry Cohort Study was designed to delineate the precursors of essential hypertension in a black population.[10-12] Male medical students from the 1957–1965 classes were initially examined following standard protocols.[10] A total of 341 of these same persons was again evaluated in 1981–1983, and a self-administered JAS (Form C) was obtained in addition to blood pressure and other physiological measurements.[13] A subset consisting of 261 black, male physicians was examined, had complete data, and is reported here. The mean medical practice experience of the group was 22.5 years at the time of reexamination.

The JAS was scored in the traditional manner by the Psychological Testing Corporation, and it was also scored by analysis of total and subscale raw scores by tertiles. Weight was obtained on a standard scale, with outer clothing and shoes removed, and reported to the nearest half pound. Height was measured to the nearest half inch without shoes. Height and weight data were combined to obtain relative body weight, which was computed by employing the 1959 Build and Blood Pressure Tables.[14] Obesity was defined as greater than 120 percent of relative body weight.[12] Other recent history was obtained using a modified MRFIT protocol.[10]

Blood pressure was measured following accepted techniques.[15] With the subject in a supine position, and without a period of rest, the blood pressure was taken in the right arm. The level on the manometer at which the first regular sounds appeared with deflation was recorded as the systolic blood pressure. The level at which the sounds disappeared completely was recorded as the diastolic blood pressure. After one to two minutes another pressure was recorded and the average of the two was taken as the casual blood pressure. Hypertension was defined as blood pressure greater than 140 systolic or 90 diastolic mmHg, a history of physician-diagnosed hypertension, or current use of prescribed antihypertension medication.[10]

TABLE 1. TYPE A AND PRACTICE SPECIALTY OF BLACK PHYSICIANS

Specialty	JAS* Type	
	Type A No. (%)	Non-Type A No. (%)
Internal medicine	13 (43)	17 (57)
General and family practice	23 (53)	20 (47)
Pediatrics	15 (65)	8 (35)
Psychiatry	6 (38)	10 (62)
Surgery	45 (70)	19 (30)
Obstetrics	21 (60)	14 (40)
Anesthesiology	3 (33)	6 (67)
Other	16 (52)	15 (48)
Total	142 (57)	109 (43)

* Jenkins Activity Survey
Practice unknown or not in practice = 10

RESULTS

Traditional scoring of the subjects' JAS revealed that 142 (54.4 percent) were Type A, 10 (3.8 percent) were neither A or B, and 109 (41.8 percent) were Type B. Thus the division between A and non-A types was nearly equal. The prevalence of Type A behavior exhibited by black physicians tended to vary by practice specialty (Table 1). The majority of physicians practicing surgery, obstetrics, general and family practice, and pediatrics exhibited a Type A behavior pattern. The majority in psychiatry, anesthesiology, and internal medicine were non–Type A.

Since Type A represents competitiveness and striving behavior, it was expected that Type A physicians would be leaner than their counterparts. Obesity was defined as greater than 120 percent relative body weight; and obesity was associated with non–Type A physicians at a nearly statistically significant level ($P = .07$). As indicated in Table 2, proportionately more non-obese physicians were Type A while more obese physicians were non–Type A.

Since Type A behavior is associated with coronary heart disease, an association between Type A and its risk factor, hypertension, was sought. Among Type A physicians the prevalence of hypertension was 46/

TABLE 2. TYPE A AND OBESITY IN BLACK PHYSICIANS

Weight Status	Jenkins Activity Survey: Type A No. (%)	Type B No. (%)	Total No. (%)
Not obese	119 (59)	84 (41)	203 (100)
Obese	22 (45)	27 (55)	49 (100)
Total	141	111	252

$\chi^2 = 3.014$, $df = 1$, P = .07
Weight status unknown = 9

TABLE 3. TYPE A AND HYPERTENSION IN BLACK PHYSICIANS

Jenkins Activity Survey (traditional scale)	Blood Pressure Level: Hypertensive No. (%)	Normotensive No. (%)
Type A	67 (58)	80 (54)
Neither A or B	3 (3)	7 (5)
Type B	44 (39)	60 (41)
Total	114 (100)	147 (100)

$\chi^2 = 1.0556$, $df = 2$, P = .589

100, while the prevalence among Type B was 42/100. Using traditional JAS scoring methods (Table 3), 58 percent of hypertensive men had Type A and 54 percent of the normotensive men had Type A behavior. The difference in percentage of Type A present by blood pressure level was not statistically significant (P = .58). To project stronger indications of Type A pattern, the raw JAS scores were divided into tertiles, but this approach indicated no statistically significant difference in the distribution of Type A behavior by normal or hypertensive blood pressure levels (Table 4). The same result was obtained when the middle tertile of JAS scores was excluded and only the highest and lowest scores were compared.

Correlations were made between JAS scores and blood pressure (Table 5). Systolic blood pressure had a negative correlation with the job involvement subscale that was statistically significant (P = <.05). Diastolic blood pressure correlated positively with the job involvement subscale at the same level of statistical significance. Blood pressure correlations with total JAS and the other JAS subscales were not significant.

TABLE 4. TYPE A AND HYPERTENSION IN BLACK PHYSICIANS

Blood Pressure Level	Tertiles of Type A: T1	T2	T3
Normotensive	43	50	54
Hypertensive	32	43	39
Total	75	93	93

$\chi^2 = 3.935$, $df = 2$, P = .821
T1 = Non-Type A; T2 = Mixed; T3 = Type A

TABLE 5. CORRELATION BETWEEN JENKINS ACTIVITY SURVEY (JAS) SCALES AND BLOOD PRESSURE MEASUREMENTS IN BLACK PHYSICIANS

JAS	Blood Pressure Measurements: Systolic BP	Diastolic BP
Total JAS	−.004	.047
Subscale 1 (Speed/impatience)	−.012	.027
Subscale 2 (Job involvement)	−.135*	.0142*
Subscale (Competitive striving)	.006	.001

* P = <.05

DISCUSSION

This study was conducted to depict the profile of Type A behavior among a group of black physicians and to examine selected biomedical correlates. Of particular interest is the relationship found between Type A behavior and occupation. Although the sample size is small, there appears to be a trend between physician practice specialty and Type A behavior. There is probably a strong element of self-selection in the choice of practice specialty; and the perceived Type A behavior may precede, develop concurrently, or result from specialty practice choice as described by Sorensen et al.[16] Some of the findings in the study reported herein fit the stereotypes of practice, such as the majority of surgeons would be Type A while the majority of psychiatrists would not. Less expected was the relatively high percentage of Type A behavior re-

ported by pediatricians and obstetricians. The correlation found between blood pressure and job-involvement subscale also underscores the possible occupation–Type A behavior relationship. James et al[17] have commented upon the excessive job perfection drive against unfavorable circumstances, which they noted in a black population, and termed the behavior "John Henryism." The results obtained in the present study tend to confirm the findings of the James et al study, which were obtained with lower socioeconomic status blacks.

This study attempted to establish a link between Type A behavior and hypertension such as is found in coronary heart disease. The total JAS scores did not show a relationship to hypertension. The proportion of Type A men in this sample would not appear to be exceptionally high (57 percent),[8] while the prevalence of hypertension at 44/100 validates the Hypertension Detection and Follow-up Program's remarkably high finding for professional black men.[1] In other words, hypertension was at a sufficiently high level of prevalence that a relationship with Type A behavior should have appeared if one existed. Essentially, this study reflects the work of Smith and colleagues who found no relationship between Type A behavior and hypertension prevalence in a low-income group of Chicago black women.[9] This is surprising in view of the social status (occupational and educational) differences between the two groups.

The authors conclude that in a black professional population (1) the JAS in its present form does not relate to essential hypertension; (2) JAS does tend to relate to physician practice specialty; (3) the job involvement subscale does relate to blood pressure in black populations; and (4) there may be a relationship between Type A behavior and body leanness. The last relationship, however, may be secondary, as more Type A physicians were smokers and the relationship between leanness and smoking is known.[18] Also, in view of the selected occupational status of the subjects, this study cannot be generalized to other black populations.

Acknowledgments

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