

# PREVALENCE OF COMA IN BLACK SUBJECTS

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**Coma, commonly known as "being unconscious" or "out cold," is a state of consciousness characterized by a total inability to perceive incoming stimuli. A retrospective phenomenologic study found that 10 of 36 control, 19 of 36 precare, and 20 of 36 aftercare subjects (49 of 108, or 45.4 percent) had experienced coma at least once during their lives. The implications of these findings are discussed.**

Coma, or loss of consciousness, is considered one of 18 states of consciousness (the others being dreaming, deep sleep, sleep paralysis, daydreaming, repressed memory, trance, meditation, internal scanning, regression, fragmentation, lethargy, hyperalertness, frenzy, rapture, intoxication, expanded consciousness, and normal waking state)<sup>1</sup> that signal the possibility of a serious neurologic event that may result in neuropsychological impairment. The etiology of coma may be alcohol, epilepsy, infection, opium and other drugs, uremia, trauma, insulin (too much or too little), poison, or shock. These etiologies may be remembered with the help of the mnemonic AEIOU TIPS.

In response to the lack of basic psychiatric knowledge on black populations, the Community Mental Health Council (CMHC) in Chicago began a research project to qualify and quantify the states of consciousness as experienced by blacks. Three groups were chosen for study: control subjects who had never suffered mental illness; precare subjects who had been treated for mental illness only as outpatients; and aftercare subjects who had received both outpatient and inpatient treatment for mental illness. This paper focuses on the subjects' reports on their experience with coma.

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## METHODS

Thirty-six patients from each of CMHC's pre-care and aftercare programs were selected at random to participate in the project. Thirty-six control subjects were selected from the research team's nominations of individuals known to them personally. A structured interview was designed in which a trained interviewer read the definition of coma and gave examples to the 108 research subjects. The subjects were asked to decide whether they had experienced this state of consciousness and, if so, to tell the interviewer about it. Subjects who had not experienced coma were asked whether they had ever heard of it or knew someone who had experienced it. This part of the questionnaire was designed to ensure that the subjects understood the nature of coma and that their reported experience matched the definition given. Once it was established that the subject had experienced the defined state, a standard series of questions was asked to determine whether this state could be self-induced or self-terminated, whether it could be induced or terminated by others, or whether the subject had any control whatever over the state of coma. Subjects were asked whether they wanted to experience this state more often and to explain why they did or did not wish to do so. They were asked how often coma occurred and how long it lasted. Subjects were asked whether this state of consciousness made them comfortable or uncomfortable, and how; whether it ever got them into trouble or difficulty, and how; and whether it ever helped them to cope, and how. Subjects were asked whether their experience with coma had changed with age and, if so, how it had changed. They were also asked about their experience with other states of consciousness. The interviews were audiotaped and reviewed by the principal investigator to check for consistency in the interviewing technique and validity of the subjects' reports. Subjects were also

**TABLE 1. CAUSES OF SUBJECTS' LONGEST EPISODE OF "NONSURGICAL COMA"**

Type of Coma	Control (n = 10) No.	Precare (n = 19) No.	Aftercare (n = 20) No.
Mild (<30 min)			
Trauma			2
Interpersonal trauma	1	1	1
Sports trauma	2	1	
Childhood trauma	1	4	2
Interpersonal childhood trauma		1	
Drugs		1	
Childhood diabetes			1
Moderate (30 min-24 hr)			
Trauma		1	2
Interpersonal trauma	1	1	
Sports trauma	1		
Childhood trauma		2	3
Interpersonal childhood trauma		1	
Near drowning	1		
Pain	1		
Infection			2
Childhood infection		1	
Drugs			1
Severe (>24 hr)			
Trauma		1	1
Childhood trauma			1
Interpersonal childhood trauma			
Infection	1	2	1
Duration Unknown			
Trauma			2
Interpersonal trauma	1		
Childhood trauma		1	1
Drugs		1	

given objective written tests (Holmes-Rahe Social Readjustment Scale, Saafir Stress-Anxiety Diagnostic Scale, and the Millon Clinical Multiaxial Inventory), and demographic data were collected.

**RESULTS**

Of the 108 subjects, 49, or 45.4 percent, reported having experienced at least one state of coma. The 49 subjects were classified as 10 control, 19 precare, and 20 aftercare subjects (27.8, 52.8, and 55.6 percent, respectively). Trauma accounted for 37 of the 49 reported episodes; 6 reports of infection, 3 reports of drug overdose, and 1 report each of nearly drowning, diabetic coma,

and pain from sickle cell crisis accounted for the remaining 12 episodes (Table 1). (Unconsciousness resulting from surgery was excluded from the causes of coma.) Sixteen subjects had lost consciousness because of nonsurgical coma more than once; however, the findings in Table 1 indicate only the most severe episode of coma experienced by each subject. Only one of the control subjects had an episode of trauma that resulted in a mild coma in childhood. Ten of the precare subjects experienced their coma in childhood; 5 episodes were mild, lasting less than 30 minutes; 4 were moderate, lasting more than 30 minutes but less than 24 hours; and 1 was of unknown duration. Eight of the aftercare subjects had had a state

of coma during childhood; 3 episodes were mild, 3 were moderate, and 2 were severe—lasting more than 24 hours.

Eighteen of the 49 subjects (36.7 percent) reported having had a mild coma (lasting less than 30 minutes); 18 of the 49 subjects (36.7 percent) reported having had a coma of moderate severity (lasting more than 30 minutes but less than 24 hours); 7 of the 49 subjects (14.3 percent) reported having had a severe coma (lasting more than 24 hours); and 6 of the subjects (12.2 percent) did not know for how long they had lost consciousness.

Of the 59 subjects who had never experienced “nonsurgical coma,” 19 had experienced surgical events in which anesthesia induced coma. If anesthesia-induced unconsciousness were considered a form of coma, it would bring the total number of subjects that experienced at least one episode of coma to 68, or 73 percent. In all, 32 of the 108 subjects had experienced surgery that called for the induction of a “controlled coma.”

Of the total test subjects, 52 were men and 56 were women. The average age was 31.3 years and the average educational level was 13.8 years. Twenty-three subjects were living with spouses (21.3 percent). The control population consisted of 23 men (64 percent). Fourteen men were precare subjects and 15 men were aftercare subjects (39 and 42 percent, respectively). The average age in all three groups was in the early 30s. The controls had an average of 15.4 years of formal education, the precare subjects an average of 13.6 years, and the aftercare subjects an average of 12.5 years. Of the control subjects, 41.7 percent were living with a spouse compared with 5.6 percent of the precare sample and 11.1 percent of the aftercare sample. Of the 10 controls who had experienced coma, 9 were male; of the 19 precare subjects, 10 were male; and of the 20 aftercare subjects, 10 were male.

The findings of the objective tests are reported in an earlier article on sleep paralysis.<sup>2</sup> Further reports on the other states of consciousness, a more detailed analysis of the objective tests and their relationship to the states of consciousness, and the use of altering states of consciousness to master stress<sup>3</sup> will be forthcoming.

## DISCUSSION

States of coma occurred in this cohort at a rate

of 45.4 percent, an extremely high rate of exposure to a potentially serious neurologic event that can have serious implications for neuropsychological impairment. Thirty-seven of the comas (75.5 percent) were due to trauma or concussion, ie, head injury severe enough to cause a loss of consciousness. Concussion has been known to cause post-concussion syndrome that can be identified objectively on electroencephalogram with somnographic patterns in nocturnal sleep.<sup>4</sup> Postconcussion syndrome may consist of various somatic sequelae such as headache, dizziness, nausea, and vasomotor instability causing hyperhidrosis.<sup>5</sup> However, it has been stated that “the most consistent consequence of a head injury is some disorder of mental functioning, either temporary or permanent.”<sup>6</sup> After a concussion of moderate severity there is measurable impairment of cognitive functioning attributed to fatigue, inattention, and defects in rapid information processing.<sup>7</sup> Patients may complain of memory and concentration difficulties. Psychological symptoms of anxiety, fear, insomnia, restlessness, fatigue, nervousness, and depression have also been described.<sup>8</sup> Clinicians have noted personality changes consisting of reduced drive, or apathy; affective changes of euphoria, irritability, lability, or blunted affect; a decrease in the ability to adapt and cope with new environmental stress; a decrease in social restraint and judgment; and exaggeration or reversal of personality traits. After a more severe injury, associated with coma of some hours’ duration, the patient may be in a state of fragmentation (disordered consciousness or psychosis) for many hours or days. As 16 of the 49 subjects reported they had had at least one moderate or severe concussion, this neurologic event may have altered their lives. One study found severe behavioral and aggressive disorders in children and adolescents related to serious craniofacial trauma.<sup>9</sup> The episodes of childhood coma in the sample was 17.6 percent (1 percent in the control subjects and 16.6 percent in the psychiatric subjects—precare and aftercare cohorts). Coma in childhood may have etiologic significance for the development of psychiatric disorders in later life, or it may have an associational rather than causal correlation.

Nine of the 49 subjects had been the victims of interpersonal violence that resulted in coma. Of 702 patients admitted for head injuries to Cook County Hospital, Chicago, over a one-year period

interpersonal injuries accounted for the majority (55.7 percent) of the injuries to adults. Of this sample 77.6 percent were black, 80 percent were male, and 70 percent had annual incomes below \$6,000. Fatal injuries were reported for 2.4 percent of the sample.<sup>10</sup> Severe spouse beatings occur in about 5 percent of US households and may have greater incidence in black households.<sup>11</sup>

There is some evidence that cerebral insult resulting in unconsciousness or neuropsychological impairment may in part be responsible for interpersonal violence. A study of 130 violent patients found that 55.4 percent had been unconscious because of injury or illness. Researchers hypothesized that some of the difficulties of many of the patients were the result of minimal brain damage.<sup>12</sup> This hypothesis is supported by the findings of Dr. R. Langvin, who reported to the Canadian Psychiatric Association that one fourth to one third of violent offenders had neuropsychological impairment compared with nonviolent offenders who had none. The finding that 45.4 percent of this population had experienced at least one state of coma during their lives and the association of states of coma with violent individuals may be helpful in reaching a greater understanding of the high incidence of black-on-black violence.

The relation between coma and violence may be of considerable importance in understanding murders, a vast majority of which are "crimes of rage" or "crimes of passion," involving acquaintances or relatives. These crimes, classified as primary homicides, were responsible for 75 percent of all murders in the United States from 1976 to 1979.<sup>13</sup> These homicides were overwhelmingly intraracial, specifically, black-on-black murders. Currently, homicide is the leading cause of death of black men aged 15 to 44, and may account for up to one third of all the deaths of black men in this age range. Clearly, an environment that produces high numbers of coma resulting from traumatic incidents and other causes must be changed, as these incidents may be the result of violence and neglect that proceed to cause more violence and neglect. Rather than collecting FBI and police "body count" statistics on the numbers of black-on-black murders there must be positive intervention in this vicious cycle. Various governmental agencies must be mandated to observe patients with head injury and provide them with adequate follow-up services to prevent their being contin-

ued victims of head injury. Rose<sup>14</sup> demonstrated that 80 percent of black homicide offenders compared with 47 percent of the victims had histories of episodic fighting, and Dennis et al<sup>15</sup> demonstrated in a study of black homicide that offenders and assault victims (proxies for homicide victims) engaged in fighting at a much higher rate than the controls of their population. The authors of this paper hypothesize that the early identification of an individual who presents to an emergency room with concussion from interpersonal violence could aid in targeting individuals who could benefit from prevention services designed to combat black-on-black murder. For example, a woman presenting to the emergency room with a concussion sustained from spousal abuse could be engaged to have her family participate in family counseling. Therapeutic counseling might curb future spousal abuse that might otherwise have resulted in a black-on-black murder.

Twenty-nine of the 49 subjects were male (59.2 percent) and 20 were female (40.8 percent). Control males experienced at least one episode of coma at a rate of 39.1 percent, whereas precare males and aftercare males experienced coma at 71.4 percent and 66.7 percent, respectively. Control females had had states of coma at a rate of 7.7 percent compared with precare females who had it at a rate of 45.5 percent and aftercare females at 47.6 percent. Twice as many men as women may present to emergency rooms for treatment of head injuries<sup>6</sup>; it is suspected, therefore, that the variance in number between men and women in the study groups is caused by life-style differences related to sex. Psychiatric male subjects (precare and aftercare) had experienced coma (51.3 percent) at a greater rate than the nonpsychiatric male subjects (39.1 percent). Female psychiatric subjects had experienced coma (44.2 percent) more than five times more often than nonpsychiatric women (7.7 percent). These findings may be caused by a number of variables such as the small size of the population causing skewing of the results, educational differences between the groups, or the significance that episodes of coma may have in the etiology of psychiatric disorders. Further investigation on larger populations controlled for age, sex, education, and socioeconomic status is warranted to further delineate the problem.

The psychological response of the black individual and the black community regarding the high

numbers of coma occurring in black subjects, psychiatric and nonpsychiatric, must be considered. It may well be that, depending on the circumstances, a coma will seriously influence the development of the narcissistic components of an individual's personality, for unconsciousness challenges feelings of grandiosity and omnipotence; an extreme sense of vulnerability remains that may be handled in a constructive or destructive manner.<sup>16,17</sup> The response of the black community has primarily been one of fear or denial. However, the time has come for the black community to honestly face the problem, holding itself and society accountable for the solution.

## CONCLUSIONS

The finding that 27.8 percent of the control, 52.8 percent of the precare, and 55.6 percent of the aftercare subjects (45.4 percent of the total study population of 108) experienced at least one state of coma is an indication that coma may be a common occurrence in the black population, both psychiatric and nonpsychiatric. Furthermore, 75.7 percent of the reported comas were caused by trauma or concussion, and 20.4 percent of the coma reported had been caused by interpersonal injury. These facts are consistent with the findings from the two inner-city studies that describe clinical head injuries for which interpersonal violence was often responsible (49.7 percent in one study<sup>10</sup> and 37 percent in the other).<sup>18</sup> This information and the finding that explosive rage may appear in a previously normal subject after head trauma or other cerebral insults<sup>19</sup> demand further investigation in the etiology of a national public health problem—black-on-black violence.

The finding that the two types of psychiatric patients, precare and aftercare, had experienced nearly twice as many states of coma as controls leads to questions about the role of coma in the etiology of psychiatric states in blacks. Follow-up of patients who have received immediate medical attention for states of coma is essential; it may aid in the prevention of black-on-black violence and reduce the morbidity of postconcussion syndrome.

The high number of "nonsurgical coma," childhood coma, and surgical events necessitating

anesthetics to induce a "controlled coma" are indications of the high amount of violence, trauma, and illness in the black population examined. The facts suggest a sad statement about the quality of life of some black populations, psychiatric and nonpsychiatric. More must be done.

## Literature Cited

1. Bell CC. States of consciousness. *J Natl Med Assoc* 1980; 72:331-334.
2. Bell CC, Shakoob B, Thompson B, et al. Prevalence of isolated sleep paralysis in black subjects. *J Natl Med Assoc* 1984; 76:501-508.
3. Bell CC. Black intrapsychic survival skills: Alterations of states of consciousness. *J Natl Med Assoc* 1982; 74: 1017-1020.
4. Hanley J. The signature of post-concussion syndrome in the sleep tracing. *Neuropsychiatric Bull* 1983; 8:1-3.
5. Merritt HH. *A Textbook of Neurology*. Philadelphia: Lea & Febiger, 1975, pp 341-342.
6. Jennett B, Teasdale G. *Management of Head Injuries*. Philadelphia: FA Davis, 1981, p 289.
7. Gronwall D, Wrightson P. Delayed recovery of intellectual function after minor head injury. *Lancet* 1974; 2:605-609.
8. Strub RL, Black FW. *Organic Brain Syndromes: An Introduction to Neurobehavioral Disorders*. Philadelphia: FA Davis, 1981, p 275.
9. Lewis DO, Shanok SS, Cohen RJ, et al. Race bias in the diagnosis and disposition of violent adolescents. *Am J Psychiatry* 1980; 137:1216-1221.
10. Desai BT, Whitman S, Coonley-Hoganson R, et al. Urban head injury: A clinical series. *J Natl Med Assoc* 1983; 75:875-881.
11. Staples R. *Black Masculinity*. San Francisco: Black Scholar Press, 1982, p 68.
12. Bach-y-Rita G, Lion JR, Climent C, et al. Episodic dyscontrol: A study of 130 violent prisoners. *Am J Psychiatry* 1971; 127:1473-1478.
13. Jason J, Flock M, Tyler CW. Epidemiologic characteristics of primary homicide in the United States. *Am J Epidemiol* 1983; 117:419-428.
14. Rose HM. *Black Homicide and the Urban Environment*. US Government Printing Office, 1981.
15. Dennis RE, Kirk A, Knuckles BN, et al. *Black males at risk to low life expectancy: A study of homicide victims and perpetrators*. Washington, DC: Center for Studies of Minority Group Mental Health, NIMH grant No. 1 RO1 MH36720, 1981.
16. Bell CC. Racism, narcissism, and integrity. *J Natl Med Assoc* 1978; 70:89-92.
17. Bell CC. Racism: A symptom of the narcissistic personality disorder. *J Natl Med Assoc* 1980; 72:661-665.
18. Barber JB, Webster JC. Head injuries: A review of 150 cases. *J Natl Med Assoc* 1974; 66:201-204.
19. Elliott FA. The neurology of explosive rage: The dyscontrol syndrome. *Practitioner* 1976; 217:51-60.