Table 1. Carbon Monoxide Poisoning

Percent Carboxyhemoglobin Saturation in Blood	Signs and Symptoms
0-10	None
10-15	Headache
25	Severe headache, nausea, fatigue, poor exercise tolerance
35	Severe headache, weakness, vomiting, dizziness, visual disturbance
45	Collapse, vomiting, tachypnea, tachycardia
55	Stupor, convulsions, Cheyne-Stokes respiration, may be fatal
65	Coma, convulsions, cardiovascular, and respiratory depression, often fatal
>70	Nearly always fatal

from the carbon monoxide exposure. Aspiration pneumonia, adult respiratory distress syndrome, cerebral hemisphere demyelination, peripheral neuropathies, rhabdomyonecrosis, myocardial damage, and renal insufficiency may all occur as complications of severe carbon monoxide poisoning.

Detection is dependent on history and a high index of suspicion. Since biochemical repair begins as soon as the patient is exposed to fresh air, a history of exacerbation and remission of symptoms may be obtained. The possibility of carbon monoxide poisoning should be considered in patients without other explanation for a syndrome of headache, dizziness, weakness, and nausea. Investigation of industrial or private exposure to exhaust fumes from internal combustion engines or furnaces may be indicated in the workup of this problem.

The administration of oxygen is the most important element in therapy. For a resting adult, it takes four hours to eliminate one half the carboxyhemoglobin breathing room air, but only 40 minutes if breathing pure oxygen. When respiration is absent or inadequate, artificial respiration may be necessary; in severe cases, hyperbaric oxygen has been life saving.[5]

References

1. Zenz C: The epidemiology of carbon monoxide in cardiovascular disease in industrial environments: A review. Prev Med 8:279, 1979
2. Rieders F: Noxious gases and vapors. I: Carbon monoxide, cyanides, methemoglobin, and sulfhemoglobin. In DiPalma JR (ed): Drill's Pharmacology in Medicine. New York, McGraw-Hill, 1971, pp 1180-1189
3. Anderson DE: Carbon monoxide intoxication. Rocky Mt Med J 75:94, 1978
4. Arena JM: Poisoning: Toxicology, Symptoms, Treatment. Springfield, Ill, Charles C Thomas, 1979, pp 239-242
5. Anderson GK: Treatment of carbon monoxide poisoning with hyperbaric oxygen. Milit Med 143:538, 1974

Personality and Values in Family Medicine Residents

Gordon J. DiRenzo, PhD
Wilmington, Delaware

It seems to be a prevalent, and somewhat optimistic, assumption that people entering medicine nowadays, and family medicine in particular, are by and large appreciably different in personality from their counterparts of a decade or two ago. Chiefly indicative of this situation are the alleged differences in values that are typical of today's physicians. Evidence to support this assumption, however, is not conclusive. Efforts have been directed at an exploratory analysis of this question through a number of conceptual and methodological dimensions that have not been applied in the

From the Department of Sociology, University of Delaware, and the Family Practice Residency Program, St. Francis Hospital, Wilmington, Delaware. Requests for reprints should be addressed to Dr. Gordon J. DiRenzo, Family Practice Residency Program, St Francis Hospital, Seventh and Clayton Streets, Wilmington, DE 19805.

Communications continued on page 448

0094-3509/81/090443-03$00.75

Communications continued from page 443

fields of medicine. Much of the existing research in question has concentrated on describing specific personality traits and specific values rather than on the whole personality. A focus on personality types and/or composite values systems, however, may be a more fruitful dimension for responding to the issues at hand.

Methods

Subjects for this research comprised an availability sample of 22 residents in the family practice program of a large medical center in an eastern metropolitan area. The subjects were distributed fairly equally over each of the three years of the residency. This sample consisted of 17 male and 5 female residents. These subjects self-administered a protocol consisting of the D-20 version of the Rokeach Dogmatism Scale[1] as a measure of personality structure, the Rokeach Scales for Terminal and Instrumental Values,[2] and a number of items measuring relevant attitudes and social background characteristics.

Extensive and independent research has established that dogmatism represents and the Dogmatism Scales measure a general personality syndrome rather than singular psychological characteristics. Dogmatism focuses essentially on the organization of belief systems and more especially on the openness and closedness of belief systems. The theoretical utility of this approach is that the Dogmatism Scale measures the structural properties common to ideologies in order to delineate personality organization. It is not so much *what* one believes as *how* that distinguishes the dogmatic personality.

The person with a dogmatic personality may be described as one who has a closed way of thinking about any ideology regardless of its content, is rigid in regard to values and beliefs, and makes an uncritical acceptance of authority. Central to the dogmatic syndrome, moreover, is the intolerance of ambiguity. The dogmatic personality structure in its ideal-typical form is one that prefers stereotypical thinking and black-white, categorical judgments to subjective speculations on unresolvable questions involving issues of personal value. Such a personality structure would appear to be highly problematic in the practice of contemporary medicine, especially at the level of primary care.

In the Rokeach value scales, the respondent is given the task of placing in rank order (from most desirable to least desirable) 18 terminal values, those dealing with preferred end states of existence (eg, a comfortable life, security), and 18 instrumental values, those dealing with preferred modes of behavior (eg, honest, obedient).

Results

Within a possible range of scores of ± 60, the mean dogmatism score for the total sample is -12.50, with a standard deviation of 16.98, indicating that the sample as a whole is substantially nondogmatic. Only 4 of the 22 residents, in fact, were dogmatic scorers, indicating a highly homogeneous sample in terms of personality structure or type. Table 1 contains the mean rank order for the terminal and instrumental value hierarchies for the sample. These composite profiles remain consistent with the apparent trends toward decreased dogmatism found among medical students in relatively short-term longitudinal studies.[3] While there are variations in these hierarchies for the relative position of specific values, statistical analyses reveal that there are highly statistically significant positive correlations ($P<.001$) among all hierarchies as well as with any possible combination of hierarchies.

Comment

These findings for both general type of personality and composite profiles of specific values indicate a highly monolithic or homogeneous psychological profile among the residents in this sample. The extent to which these findings are typical of physicians currently entering the field of family medicine is limited only to the extent to which this sample can be assumed to be atypical of residents presently enrolled in family medicine residency programs. There are no a priori reasons to suggest that such a situation is indeed true.

These data suggest that a "new" and distinctive type of personality may modally characterize physicians currently entering the field of family medicine. This is not to say that there is not a heterogeneity of personality among family physicians, but only that a distinguishing personality type may be found so extensively as to be designated the "average" or "typical" psychological expression. These findings, moreover, suggest that this distinctive type of personality, both in

Table 1. Mean Rank Order for Hierarchies of Values

Terminal Values		Instrumental Values	
Happiness	3.82	Honest	3.62
True friendship	6.25	Capable	5.20
Inner harmony	6.46	Loving	7.06
Self-respect	6.68	Independent	7.16
Mature love	6.71	Broadminded	7.24
Freedom	6.92	Responsible	8.17
Wisdom	7.04	Intellectual	8.42
Family security	7.89	Logical	8.55
A sense of accomplishment	8.19	Helpful	8.71
An exciting life	10.55	Forgiving	9.63
A world at peace	11.53	Courageous	10.15
A comfortable life	11.75	Imaginative	10.28
Equality	11.81	Self-controlled	10.49
Salvation	12.13	Cheerful	10.70
Pleasure	12.20	Polite	12.61
Social recognition	12.69	Ambitious	12.95
A world of beauty	12.82	Clean	14.31
National security	15.42	Obedient	16.05

terms of general structure and particular value systems, would be somewhat consistent with the psychological profile that, in some quarters at least, has been described as ideal for the practice of family medicine.

These findings, along with others that they substantiate, indicate that the field of family medicine may be attracting, and in high proportion, those psychological types of individuals who are thought to be more congenial to professional success in primary care and patient oriented medicine. Such a situation is taken to be a highly significant change in medical recruitment.

Others have taken the position that, however real, this new phenomenon may be a product only of transitory, sociopolitical forces and hence is simply a temporary event that will have slight long-term impact on both medical education and medical practice.[4] It is further suggested by such observers that even these "new" residents will not be appreciably different from their predecessors by the time they complete their training and enter regular practice. The institutionalized processes of professional socialization and training in medicine are alleged to consist of highly influential and resistant forces in the psychological molding of the physician.[5] Claims have been made that the liberalism of beginning medical students moves toward an increasing conservatism during training, and eventually toward a high level of conservatism among physicians.[6] Still others maintain that the behavior of medical practitioners is influenced more by the character of special settings or situations than by personality structure and/or strongly held belief systems and values.[7] Such an argument, of course, is not very convincing in residency programs, where curricular changes and a new psychosocial climate are consistent with the professional objectives and observed actualities of recruitment.

There is now a need for evidence that the observed personality types among family physicians are actually delivering more effective medical care at the primary level, and perhaps further, that they derive significantly more psychological and professional satisfaction from doing so than may be true of their predecessors.

References

1. Rokeach M: The nature and meaning of dogmatism. Psychol Rev 61:194, 1954
2. Rokeach M: Belief, Attitudes and Values. San Francisco, Jossey-Bass, 1968
3. Juan IR, Paiva REA, Haley HB, et al: High and low levels of dogmatism in relation to personality characteristics of medical students: A follow-up study. Psychol Rep 34:303, 1974
4. Ragan CA: Will it be possible to detect human qualities in selecting medical students. Resident Staff Physician 23:77, 1977
5. Rezler AG: Attitude changes during medical schools: A review of the literature. J Med Educ 49:1023, 1974
6. Coe R, Pepper M, Mattis M: The "new" medical student: Another view. J Med Educ 52:89, 1977
7. Friedson E: Profession of Medicine. New York, Dodd, Mead, 1970