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Health Factors in Police Job Stress

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During the past four decades, government, business and unions increasingly have recognized the importance of improving the health and safety standards of the work environment. The physical and emotional well-being of workers has become an issue of humanitarian concern, as well as having legal and profit ramifications for organizations. These concerns have provided impetus for improving the work environment. Health and safety programs and engineering modifications have made inroads in decreasing job hazards. Noise levels have been reduced, toxic substances controlled, and safety devices added to dangerous machinery. Much work remains to be done in reducing the incidence of work-related accidents and illnesses. But the evidence to date shows that considerable progress has been made in protecting the worker from the physical hazards of his or her job (Quint, 1969).

Of more recent concern is the issue of psychological job stress and individual well-being. People spend large portions of their daily lives in work environments, coping with the demands and needs of their supervisors, subordinates, and the overall requirements of their jobs. Organizations exert their unique forces on individuals. The forces of the work environment direct behavior toward certain activities and goals, and away from others. The rewards of working can help provide for personal growth and financial security. However, the work environment extracts its price too. An impressive body of research has been accumulating which indicates that there is a strong relationship between psychological job stress and ill health. Occupational stresses contribute to the deterioration of the physical and mental well-being of many employees, costing organizations and society immeasurable losses in human resources. For heart disease alone, the direct cost of medical care and loss of output amounted to \$22.4 billion, or four percent of the GNP in 1963 (The President's Commission on Heart Disease, Cancer, and Stroke, 1964).

The pressures of the job environment may result in a number of psychologically or physiologically related pathologies. These may be expressed in absenteeism, apathy, turnover, or acts of violence directed against the organization. Other manifestations of stress may be ulcers, heart disease, emotional disturbance, or some other disabling disorder.

Researchers have found it difficult to define "stress" in any but the most general terms (House, 1974a). Most see stress as occurring when an individual confronts a situation where his or her usual modes of behaving are insufficient and the consequences of not adapting are serious. Situations are considered stressful where demands of the work environment exceed existing abilities or where clear obstacles exist to fulfilling strong needs or values.

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French and Caplan (1972) have developed a theoretical model for stress research which includes several classes of variables. In their model, occupations or roles are the loci of stress in organizations. Role overload, role conflict, and responsibility for people are examples of job stressors. These stressors lead to psychological and physiological strains, such as job tension, low selfesteem, elevated blood pressure and high cholesterol. The amount of strain the individual experiences is mediated by personality variables, which include capabilities, flexibility, ambition, agressiveness, etc. Strains of sufficient " intensity and duration may precipitate emotional and physical breakdowns, such as coronary heart disease.

Han Selye (1956) proposed the General Adaptation Syndrome to explain how stress may incapacitate an individual. A wide variety of environmental events or stressors, produces a pattern of bodily reactions which prepare the organism for defense. The autonomic nervous system is aroused, heart rate, blood pressure, and muscle tone are increased, and adrenalin is discharged. These defensive reactions serve the useful function of preparing the individual for "fight or flight." However, under conditions of prolonged exposure to stressors, bodily resources can be depleted. In some cases physical organs may break down, emotional instability may occur, or death may ensue. "Disease of adaptation" (e.g. cardiovasuclar disease, ulcers, arthritis, allergic reactions, etc.) may develop as a result of the body's own attempt to adapt to stress.

In recent years researchers have attempted to clarify the relationships between psychological job stress and ill health. House (1974b) reviewed the research which provides evidence for the relationship between occupational stress and coronary heart disease. He found that several indicators of job stress, such as low job satisfaction, work overload, status inconsistency, and job mobility, were consistently related to heart disease.

Several studies of specific occupations analyzed the relationship of stress to the physical and emotional well-being of its practitioners. A study by Cobb and Rose (1973) provided evidence that the psychological stress experienced by air traffic controllers resulted in elevated risks of hypertension, peptic ulcer, and diabetes. Researchers studying tax accountants found marked increase in cholesterol levels as the April 15 deadline for filing tax returns approached (Friedman, et al., 1957). Similarly, a number of studies have shown that the cholesterol level of medical students is elevated on days preceding examinations (Sales, 1969).

Police work, in particular, is an occupation which appears to involve high levels of stress. Rising crime rates, tension in the inner cities and on college campuses, and increasing levels of violence in our society during the past decade have put great demands on police. The media popularly portray police as risking life and limb to protect society, experiencing conflicting demands, and often having to face hostile feelings from the community. Initial efforts have been undertaken to study stresses of police work by examining the type of physical and emotional problems which may be occurring.

Kroes, et al. (1974) conducted interviews with 100 officers on a metropolical police force. Their data indicated several areas of job stress for police. Officers were upset with the court system: the courts were seen as lenient on criminals and insensitive in scheduling police appearance. Police administration policy often was considered inappropriate, and means of comunication were inadequate. Equipment was either lacking or in disrepair. Policemen felt community relations were negative, often hostile. Shift changes caused physical strain and had deleterious effects on family relationships. The police reported high levels of indigestion and headaches. They also had high rates of on-duty automobile accidents under non-hazardous conditions.

In addition, police experience stress from the physically dangerous and often violent nature of their employment. Lewis (1973) quoted statistics on the Charlottesville, Virginia Police Force. Their respondents report observing an injured adult three times a month, life-threatening bleeding once every three months, an injured child once every two months, the viciim of a severe assult more than once every two months, and a dead person about once every three months. However, in ten years of employment the average officer was injured only twice, with only one of these injuries requiring time off work to recover. A small study by Ford et al. (1971) showed that the expressed fear of death was no greater among police officers than among the control group of mail carriers and male college students.

Other experts point to the lack of utilization of capabilities as a stressful factor in police work. The policeman often is relegated to investigating dog bites and weed complaints (Ahern, 1972). He usually arrives at scenes of crime after the perpetrators have fled and ends up writing reports and listening to victims. Seldom does the officer get a chance to participate in managementtype decisions in his own police force (Reiser, 1974).

These initial efforts have provided evidence of some unique stresses associated with being a police officer. Researchers have studied problems which affect performance and morale. Difficulties with physical illness and family problems have been reported by police. But, to date no comprehensive studies have been completed which compare stress in police work with other occupations. The question still remains: is police work really more psychologically stressful than other occupations?

This study attempts to examine that question by looking at current health data by occupation. If being a police officer puts individuals under high levels of psychological stress, then high rates of physical and emotional diseases should occur for that occupation. Three major sources of health data are used to compare police with other occupational groups: death certificates, mental health centers and general hospitals.

Methods

The State of Tennessee was selected as an appropriate location for this study. With a tradition steeped in an agrarian economy, Tennessee has been rapidly establishing a diversified industrial base. Since World War II, new industries from aerospace and nuclear engineering to beer brewing have developed in the state. An analysis of occupational groups for the state shows a wide representation of skilled, semi-skilled, and unskilled occupations (see Table I). Table 1Distribution of Occupation Groups for MajorTennessee Occupations in 1970, Ages 18-64

	Number	Percent
Professional, Technical, Kindred	163,326	12.1%
Managers, Officials, Proprietors	102,611	7.6
Sales Workers	99,092	7.4
Clerical Workers	193,439	14.4
Craftsmen, Foremen, Kindred	198,893	14.8
Operatives, Operators	308,193	22.9
*Service Workers	164,463	12.2
Laborers, except Farm	69,859	5.2
Farmers and Farm Workers	45,734	3.4
Total	1,345,610	100.0%

*A total of 5,563 police are included in this category.

A decision was made to include occupations in Tennessee in which over 1000 people were employed in 1970. Employment statistics and standard occupation codes were derived from 1970 census data (Census of Population: 1970 Detailed Characteristics, 1972). In some cases individual occupations were combined to provide for more accurate data gathering. For example, mail carriers, mail handlers, and postal clerks were combined into one occupational category. A total of 130 different occupational categories resulted.

The ICDA system of classifying diagnoses was used as the basis for collecting and coding diagnostic information (Eighth Revision International Classification of Diseases, Adopted for Use in the United States, 1968). This system, comprised of 1,040 three-digit categories of diagnoses, is used by a large number of hospital and public health agencies for indexing and storage of morbidity and mortality data. A group of experts rated each of these diagnoses according to the degree of psychological involvement. This procedure provided a reduced list of 174 diagnoses, all considered to be related to psychological stress. The study was limited to subjects who had at least one of those diagnoses.

In order to get several indices of physical and emotional illness by occupation, three different sources of data were used. Death certificates were sampled to collect information on premature death and to examine suicide rates. Data were gathered from mental health centers so that comparison of emotional health could be made across occupations. Samples of case files from general hospitals in Nashville, Knoxville, and Memphis provided data on medical illnesses incurred by different occupations. For each sample, data collectors manually extracted the information for computerization. Each case file selected was included in the sample if it met the following criteria:

occupation: the person was employed in one of the 130 occupational categories

age: the individual's death, admission to the hospital or admission to the mental health center occurred between the ages of 18-64 residence: Tennessee residents only

diagnosis: the person must have received one of the 174 diagnoses related to psychological stress

date of admission: must be between January 1, 1972, and December 31, 1974

Information was also gathered on sex (male, female), race (white, black, other), marital status (single, married, separated, divorced, widowed), county of residence, and town size (small, medium, large). Any case file which did not provide sufficient information of which did not meet the above criteria was rejected. Each patient was counted only once in a given sample; readmissions were rejected. Data on secondary and tertiary diagnoses were collected when available.

Death Certificates. Certified records for all deaths in Tennessee are filed with the Vital Statistic section of the Department of Public Health. A random sample of death certificates was taken for this study. This sample consisted of 50% of all persons who died from January, 1972 through June, 1974. Homicides were not included in the sample. A total of 6,720 cases were gathered.

<u>Tennessee Department of Mental Health</u> (TDMH). There are 27 community mental health centers in the State of Tennessee, exclusive of the state psychiatric hospitals. These centers provide a full range of mental health services, primarily on an out-patient basis. The centers are geographically accessible to most residents of the state, and charges are based on ability to pay. Written permission to sample their case files was received from twenty-two of these centers. This sample consisted of all cases from January, 1972 through June, 1974. A person was considered employed if he or she had a stated occupation within two years prior to admission. This sample generated a total of 8,528 cases.

<u>General Hospitals</u>. Three general hospitals located in different population centers of Tennessee were selected for gathering data on occupational incidence of medical diseases. The Nashville hospital is a medium-sized general hospital located in a suburb of the city. It draws patients primarily from the central part of the state. The sample from this hospital consisted of all available cases from 1972-1974 which met the criteria for residence, employment, age, and diagnosis. Data were manually collected from manila case folders for computerization. This procedure yielded a total of 1,867 cases.

A sample of cases was taken from a general hospital in Knoxville, which serves the eastern Tennessee area. This hospital is a large medical facility located in urban Knoxville. All cases were sampled for the 1972-1974 period, with the exception of the July-December 1973 records, which were not available for this study. This sample consisted of 5,142 cases.

A large general hospital located in urban Memphis was the source for the patient sample from western Tennessee. This hospital provided the project a computer tape of all patient records for the years 1972-1974. A sample of one-seventh of these cases was taken. Since this tape did not include

information on patient occupation, this information had to be collected manually from individual case files. After elimination of cases which did not meet the project's criteria, a total of 1,719 cases remained.

In order to obtain a comprehensive sample of medical cases representative of the state, the data from these three hospitals were combined. These data provide a reasonable cross section of occupations and medical diseases. The total sample size from the medical hospitals was 8,728 cases.

Results

The results of this study indicate that police have an incidence of health problems which is somewhat greater than other occupations. An analysis of death certificates data shows that police have significantly high rates of premature death and rank third among occupations in suicide rate. Police also are admitted to general hospitals at significantly high rates. However, police do not seek help at mental health centers at greater than average rates.

The statistical method used for data analysis involved comparing the relative frequency of police in the population. A \underline{z} score was computed for each data source in order to determine if the relative frequency of police in that sample was significantly high. A summary of the results is shown in Table 2. These results are based on preliminary data analyses, therefore the reader is cautioned against making conclusive judgements for this information. A discussion of these results by data source follows.

Death Certificates. A sample of 6,720 cases was collected from this data source, of which 43 were individuals who had been employed as police officers. An analysis was made to determine if this was a significantly high number of police deaths. Using the relative frequencies of police in the sample and in the population, a z score was computed. The results show that police died prematurely at a significantly high rate (z = 2.95, p < .01).

		Table 2	
Summary	of	Preliminary	Results

	Sample Size All Occupations	No.of Police in Sample	Preliminary Results
Death Certificates	6,720	43	Significantly high*
TDMH	8, 528	55	Not significant
General Hospitals	8,728	70	Significantly high*

*p < .01

Suicide rates, another indicator of occupational stress, were examined across occupations. In the death certificate sample, a total of 363 deaths were by suicide. Five of those suicides were committed by police officers. For each occupation with four or more suicides in the sample data, an annual suicide rate per 100,000 was computed. The results in suicide rate, following laborers and pressmen. Tennessee Department of Mental Health. Of the 8,528 cases in the TDMH sample, 55 were police officers. Unfortunately, for this particular occupation a confounding factor was discovered. Some of Tennessee's mental health centers are used as resources for psychological screening of recruits and newly hired policemen. Consequently, it is not possible to ascertain exactly how many of the 55 cases were officers who were admitted for mental health problems, and how many were for routine psychological screening of police. After making a rough adjustment for this factor, it appears that police do not seek help at Tennessee mental health centers any more (or less) frequently than do members of other occupations.

<u>General Hospitals.</u> Of the 8,728 individuals in the sample who were admitted to one of the three general hospitals, 70 were policemen. The relative frequency of police hospital admissions was compared with the relative frequency of police population. The results show that police were admitted to the medical hospitals at a significantly high rate ($\underline{z} = 5.01$, p < .01). Detailed data analyses of specific diagnostic categories reveal that problems of the circulatory system and digestive disorders accounted for a large proportion of police admissions. For the Nashville hospital, these two groups of diseases accounted for 73.6% of police admissions, versus 48.3% for all occupations combined. Figures for the Knoxville hospital were 63.6% for police, 48.4% for all occupations. (The detailed analysis of data from the Memphis hospital had not been completed by publication time).

Tables 4 and 5 show the frequency of cases by sex and race for each data source. It can be seen that the police in each of the samples are overwhelmingly male and white. These frequencies differ markedly from the overall figures for employed Tennesseans (61.0% male, 86.4% white).

	Number	of Suicides	Annual Suicide	
Occupation	in	Sample	Rate/100,000 (occ.)	
Laborers		36	81.7	
Pressman		5	71.0	
Police		5	<u>69.1</u>	
Painters		8	68.2	
Carpenters		17	66.2	
Electricians		7	60.4	
Farm Owners		23	47.8	
Engineers		8	38.5	
Machinist		4	36.9	
Accountants		4	34.6	
Salesman		15	31.3	
Nurses Aides		5	30.6	
Nurses		5	29.3	
Managers/Administrators		25	28.3	
Mechanics		10	27.6	
Truck Drivers		16	25.7	
Waiters		5	24.2	
Secretaries		15	19.8	
Operatives		27	15.4	
Janitors		4	14.6	
Foremen		6	13.9	
Teachers		6	9.9	
Clerical Workers		16	8.7	
Sales Clerk		5	7.7	
Other Occupations		363	20.6	

Table 3 Annual Suicide Rates by Occupation

Annual suicide rates per 100,000 occupation. Includes all occupations with four or more suicides in the sample of January 1972- June 1974 Terressee Death Certificates.

Table 4 Sex of Police by Data Source

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	Male	Female	Total	Percent Male*	
Death Certificates	42	1	43	98%	
Tenn. Dept. Mental Health	52	3	55	95%	
General Hospitals	62	8	70	89%	

*61.0% of all employed persons in Tennessee, ages 18-64, are male.

Table 5 Race of Police by Data Source

White	Black	Other	Tota1	White*
41	2	0	43	95%
49	6	0	55	89%
68	2	0	70	97%
	41 49 68	41 2 49 6 68 2	41 2 0 49 6 0 68 2 0	41 2 0 43 49 6 0 55 68 2 0 70

*86.4% of all employed persons in Tennessee, ages 18-64, are white.

The average age of admission (average age of premature death for the death certificate data) is shown in Table 6. Comparisons between the police group and "all occupations" show only minor differences.

				Table 6				
Mean	Age	of	Admission	(or Age of	Death)	by	Data	Source

	Police All Occupation		
	TOTICE	114. Occupactoria	
Death Certificates	54.1	54.5	
Tenn. Dept. Mental Health	34.1	33.0	
General Hospitals	42.5	42.7	

To summarize the preliminary results to date:

- . . . the premature death rate for police (exclusive of homicides) is significantly high
- . . . the suicide rate for police rates third among occupations
- . . . as a group, police seek help at mental health centers at about average rates (employment screening cases confounded the results)
- . . . police are admitted to medical hospitals at a significantly high rate, often with problems of the circulatory and digestive systems.

Discussion

Research efforts are continuing on this study, and additonal information on the stresses and strain of police work will be available within a few months. Data from other sources such as Workmen's Compensation Insurance and the medical insurance records of county employees will provide additional health statistics. Effects of the variables sex, race, and age are being studied. If differences in the overall health statistics of males and females or of blacks and whites prove significant, then statistical controls for the occupational biases of these variables will be utilized. Specific analyses of disease such as duodenal ulcers, ischemic heart disease, and hypertension will show if police are especially susceptible to these stress-related diseases.

The preliminary results indicate some specific areas of health problems for police. Data from the general hospital show that police were admitted at significantly high rates. About two-thirds of police admissions were for disorders of the circulatory and/or digestive system, compared to approximately 48 percent for all occupations. Further investigation of the Memphis hospital data is needed in order to verify that these two hospitals have provided representative data, and that no biases of geography or diagnoses are affecting the results.

The rates of premature death for police were at a statistically significant level. It would be valuable to study the degree to which these rates are affected by police who "retire" to less demanding jobs, like watchmen and guards.

The suicide rate for police was third highest among the different occupations. It is interesting that this ranking is quite consistent with that found by Kroes (1974), using 1950 census data. Perhaps the violent world in which many police perform their jobs predisposes them toward the violence of self-inflicted death as a solution to personal crises. The availability of guns, an irreversible method of suicide attempt, may also be a significant variable.

The mental health data have produced no clear results. First, the sample was confounded by the police screening cases. In addition, it is unclear to what degree a police officer might be inhibited from seeking psychological help at a public mental health center. Fears of job loss could result in an officer's seeking private help, or avoiding treatment altogether. Much more information is needed in order to understand how police officers handle (or fail to handle) personal problesm of emotional distress. Too often police officers are expected by society and their fellow officers to behave in stereotyped roles. Stress and emotional upset are handled by being tough, not complaining, and not show feelings. Most off-duty police are still required to carry their guns, making it difficult for them to really let down and share their emotions. One result of this internalization of feelings may be high levels of somatic illnesses and diseases.

As some of the problems of psychological stress and individual strain in police work become more clearly identified, remedial programs can be developed. With regard to the high incidence of medical problems, several initial steps might be taken. Periodic physical examinations could be given each officer, with special emphasis placed on early detection of problems of the circulatory and digestive systems. Officers could be trained to recognize early symptoms of medical problems in their own bodies. Patrolmen could be encouraged to take sufficient time for meals while on duty, and eat at places where healthy, balanced meals are served.

Immediate steps could be taken to begin reducing the suicide rate. Crisis intervention resources and techniques are available and could be made more accessible to police. Officers could be encouraged to seek professional help for emotional problems when necessary, without feeling their jobs might be jeopardized. Periodic re-screening of police might serve as a way of detecting individuals who are having problems in handling stress.

Police need training programs which concentrate on the human side of policing. These programs can help each officer to become more sensitive to his own limits and to those of his fellow officers. It is becoming a more common practice to include human relations programs in recruit training. For example, the police recruits of Metropolitan Nashville and Davidson County receive about 70 hours of training in mental health, sociology and human relations during their 20 week session. The training includes lectures, discussions, role playing, and dramatic presentations by trained actors. Rookies get training in various aspects of human relations, including family disturbances and crisis intervention.

Additional training sessions could be developed to deal with marital stress. Programs for police rookies and their wives could prepare them for the types of family difficulties that typically result from police work and help them to find healthy solutions.

Police could be trained in specific techniques of stress-reduction. Zone car sargeants, in particular, could be instrumental in reducing stress by continually being available to listen to their patrolmen. "Time-out" periods for on-duty officers, during which they could rest and talk with effective listeners, would help reduce tensions.

Though many studies like this one are still in their conceptual and early stages, it is not necessary to wait for all the results before efforts are begun. The emotional and physical well-being of its workers certainly must be a prime concern for any modern organization. Programs can be developed now--programs that reduce job stress, that help protect the overall health of police men and women, and that help to humanize the job of being a police officer.

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Stress-Related Disorders (Strain Consequences)

Psychological stress produces not only what is commonly thought of as being frank mental and emotional disturbance, neurosis and psychosis, personality regressions, brain damage-related problems known as organic brain syndromes, and so-called traumatic neurosis also known as combat neurosis, gross stress reaction, or transient situational disturbances often resulting from life and limb threatening situations or other line-of-duty crisis, but also produces a whole gamut of psychophysiological disturbances that, if intense and chronic enough, can lead to demonstrable organic disease of varying severity. A list of such psychophysiological conditions that lead to medical and surgical conditions includes; Psychophysiological disorders of the skin such as neurodermatitis and atopic dermatitis; of the musculoskeletal system such as backache (the low back syndrome), muscle cramps, tension headaches, stiff neck; psychophysiological respiratory disorders such as bronchial asthma, hyperventilation syndrome; psychophysiological cardiovascular disorders such as high blood pressure, tachycardia, gastrointestinal disorders such as peptic ulcer, chronic gastritis, ulcerative and mucous colitia, constipation, hyperacidity, pyloric spasm, heart burn, irritable colon, gastroesophageal reflux; psychophysiological genitourinary disorders such as disturbances in urination, sexual functioning, impotency; and psychophysiological endocrine disorders such as diabetes mellitus, thyroid disorders, adrenal disorders, pituitary disorders, menstrual disorders, and other sexual hormone disorders. There is also increasing evidence that the occurrence of industrial accidents themselves are often stress-related; this has been called the "accident process"....[Selzer and Vinokur, 1974, Hirschfeld and Behan, 1963].

Increasing sick time, which may be related to conditions that may be claimed to be work-related or not, including colds and "flu" syndromes, gastrointestinal upsets, headaches, causing absence from work in reality may often be brief stress reactions, work-related or not.

Alcoholism, often resulting from stress, in the long run only adds to the impairment that has already been caused by the original or initial stress experiences. The injudicious use of medicines, whether prescribed, over the counter, or illegally obtained can also lead to further significant impairment with increasing disability and chronicity.

No matter to what extent divorce is still considered a social disorder or psychopathological, it is certainly often related to increasing stress and often in its turn, causes increasing stress. There appears to be a concensus that alcoholism, suicide and divorce are quite high among police officers when compared to the general population.

Psychophysiological disorders often develop into or contribute to significant frank organic pathology, the most common pathology being arteriosclerosis and cardiovascular disease, diabetes mellitus, peptic ulcer, high blood pressure, and low back syndrome, the latter being much too often considered to be surgical as a probable discogenic syndrome.

Further, "some researchers are now linking tension to everything from cancer-proneness to stiff necks... Diagnosis and etiology are not so simple as in the monofactorial era of the germ theory. Among the currently-recognized major factors that contribute to an individual's susceptibility to disease [are]:

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