

## WORK, PERSONAL CHARACTERISTICS AND HEALTH OF PRISON PERSONNEL

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### ABSTRACT

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The aim of the study was to investigate the stress reactions and their work-related and individual determinants in a field of work with pronounced mental stress. A group of 690 employees from all occupational groups in all Finnish prisons were studied. Data were gathered by a questionnaire, a personality inventory (semantic differential) and clinical laboratory tests. They were analysed by a multivariate method AID. A group of 19 independent work-related and individual variables explained 27% of the total variation of the sum of symptoms, 25% of psychic tension, 8% of diastolic blood pressure, and 21% of the perceived status of health. The strongest work-related predictors were occupation, duration of work experience in prison, job satisfaction, and role conflicts. Ego strength, pessimistic vs. optimistic life concept, and self-esteem proved to be the most important individual predictors.

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There is a growing body of evidence indicating that psychic and social conditions of the work environment influence the physical and mental health of working people<sup>1,4,7,8,9</sup>. It has been found that occupation and certain more specific mental and social stress factors, such as role conflicts, mental overload and underload, poor suitability to handle job demands, personal abilities and needs, etc., correlate with strain, job dissatisfaction and poor health<sup>1,2,10</sup>. The study of occupations in which mental stress occurs in extreme forms and physical load is insignificant is one important approach leading to the understanding and structuring of central elements of mental stress, its determinants and consequences.

In prison the work and work conditions have several substantial, organizational and environmental characteristics which can be viewed as potential stress factors and risks to the health and well-being of the employees<sup>5</sup>. Some of these characteristics are also typical for other closed and hierarchical organizations. The main differentiating aspect between prisons and these other institutions is the punishing function of the prison.

In addition to their main task – punishment of criminal behaviour – prisons are responsible for many other functions of their residents: cleanliness, nourishment, health, work, education, rehabilitation and leisure-time. Therefore prisons employ many occupational groups besides guards, i.e., teachers, nurses,

physicians, social workers, psychologists, workshop foremen, technical staff and office workers.

All the work done in prison is characterized by the fact that the prisoners are in custody against their will. In other aspects the work of the employees in different occupations can vary considerably, e.g., work done by guards, office workers and technical staff.

The physical work surroundings in Finnish prisons are often impractical and gloomy, most prisons having been built at the end of the last century. The degree of security varies. The biggest problem at the moment is the severe overpopulation of prisoners, which in many prisons exceeds 100%. The number of staff is set to meet only the needs of the recommended number of prisoners. The aim of the study of which this report is a part was to determine the type and degree of mental stress and health problems of Finnish prison personnel and to find out the extent to which work-related factors are connected with these disorders. The relative importance of personality characteristics and personal history data as explanatory factors was also investigated. In this report the relationships between problems of well-being and some aspects of work and character factors are discussed.

#### SUBJECTS AND METHODS

The subjects consisted of the Finnish prison personnel, born in 1940, 1935, 1930 or earlier. The total number of subjects was 690. They represented all occupations working in Finnish prisons. The proportion of different occupations corresponds roughly to the occupational distribution of all prison personnel (Table 1).

TABLE 1

Total number, percentage and mean age of the different occupational groups in the sample.

Occupational group	N	%	Mean age (years)
Directors	84	12	49
Chief guards	59	9	50
Senior guards	289	42	50
Junior guards	42	6	42
Clerical staff	43	6	51
Technical staff and workshop foremen	122	18	50
Educational and health personnel	51	7	51
Total	690	100	50

In the sample 86% were men and 14% women. The proportion of women was considerable only among clerical, teaching and nursing staff.

A questionnaire was used to gather data on work, occupational background, mental and physical symptoms and illnesses. A short personality inventory

(semantic differential<sup>11,12</sup>) was attached to the questionnaire. The subjects were also given a clinical examination which included some laboratory tests.

The data on health, work and personality were factor analysed for the basic dimensions of each group of variables<sup>5,6</sup>. The report of the multivariate analysis AID (automatic interaction detector)<sup>13</sup> that follows was based on these dimensions.

TABLE 2  
Direction of relation of independent variables, which appeared as partitioning variables in AID analyses with health indicators used as dependent variables.

Independent variable	Health indicator					Number of partitions
	Perceived health	Number of symptoms	Psychic tension	Diastolic blood pressure		
Number of prisoners	-					1
Type of prison						
Overpopulation of prison						
Duration of work experience in prison	-	+	+	+ -		8
Occupation those related to maintenance of order (vs. other)	-		+	+		4
Job satisfaction	+	-	-			4
Role conflicts at work		+	+			2
Perceived social appreciation		-				1
Living in the area of prison						
Sex						
Age	-					1
Vocational education						
Authoritarian attitude toward prisoners						
Ego strength	+	-	-			7
Intraversion vs. extraversion						
Pessimistic (vs. optimistic) attitude		+	+			4
Inclination to dominate (vs. submit)						
Self-esteem			-	-		3
Pedantic tendency						
Number of groups formed	9	10	11	5		
Percentage of total variations explained	21	27	25	8		

The dependent variables in the analyses were the following: weighted sum of symptoms, perceived health (which correlated strongly with physical disorders), psychological symptoms (anxiety), and diastolic blood pressure. With each of these dependent variables 19 independent variables, work-related and individual, (Table 2) were used in four AID analyses.

### RESULTS

The combination of independent variables used explained 27% of the total variation in the number of psychological and psychosomatic symptoms, 21% of the perceived status of health, 25% of the psychic symptoms (anxiety, tension), and 8% of the variation in diastolic blood pressure.

Table 2 summarizes the relationships of the independent variables with health-related data. The duration of work experience in prison was significantly related to each of the health indicators and was therefore the strongest predictor of health problems. The longer an employee had done prison work, the more health problems he or she had, with the exception of blood pressure, which was curvilinearly related to work experience. Occupation, which particularly reflects job content, was also a potential risk factor. Guard duty and other tasks related to punishment and the maintenance of order were the most risky ones. Fewer problems occurred among clerical, educational and nursing staff. General job satisfaction, role conflicts at work, and perceived social appreciation were additional modifiers of health. The concrete environmental factors seem to have less effect partly because of the technical weaknesses of these data.

Among the individual factors certain character features were more indicative of health disorders than, e.g., such expected background variables as age. Ego strength was the strongest predictor; the higher the ego strength the better the perceived health and the fewer symptoms of illness. Self-esteem had the same type of relation to well-being, while a pessimistic life concept and worry with respect to future events acted as negative modifiers of health indicators and increased the risk of symptomatology.

### DISCUSSION

A considerable amount of the total variation in the perceived indicators of health could be explained by some of the work-related and individual variables evaluated in the study. On the other hand their relation to blood pressure seemed minor. However, this lesser relationship does not necessarily indicate crucial difference between perceived and measured indicators and their relation to background data, since perceived health correlated strongly to a history of physical illness. In some other studies perceived health was a valid indicator of the clinically evaluated health<sup>3</sup>.

Of particular interest is the finding that there was a relatively strong relationship between such central components of the stress theory as job satisfaction and role conflicts at work and the health indicators. These two variables probably represent the most generalizable dynamic dimensions of the

work-related variables considered. Occupation and the duration of prison work, both of which reflect the basic nature of this particular field of work, acted however as the best predictors of health and symptoms of illness.

As expected, ego strength was the personality factor extracted from the personality inventory with the best correlation with the health indicators. From a theoretical point of view the predictive power of pessimistic vs. optimistic attitude towards future events and self-esteem was also remarkable. Somewhat surprising was the finding that extraversion-introversion was not significantly related even to the psychic symptoms.

The present data indicate that the general, basic work-related aspects of the stress mechanism and modifying individual factors also function in the somewhat exceptional field of the work studied.

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