

VII. Discussion and conclusions

FINDINGS

Occupational differences

Occupation was one of the most effective "global" predictors of stress and health problems among prison personnel. These problems were the most common among the guarding staff and the workshop foremen. The employees in these occupations work in close contact with the prisoners. Cooperation with them easily creates situations of conflict, the anticipation of which, and being alert, causes tension. In addition to possible problems with the prisoners, the principal guards, who act as superiors of the guards, often have conflicts due to the different expectations of the administration, the guards, and the prisoners.

The employees responsible for executing concrete punishment and the supervision of discipline are also the most exposed to the basic conflict in prison care. Society on one hand expects the prison organization to protect it from criminals. On the other, it is expected that rehabilitation and socialization of the prisoners takes place in the institutions. The satisfaction of both wishes, especially with insufficient resources (education, staff members, facilities), creates conflicts and frustration.

The workshop foremen perceived the quantitative work load as too heavy. Problems are created also by the fact that the prisoners must be placed in work no matter what their own will is. Problems in motivating the prisoners to work have, at least temporarily, been increased by a diminution of the extra monetary rewards earlier given for good and active work. Lack of work experience and the unskilled background of the inmates also cause pos-

sible difficulties for the foremen. The expectation is that the work must be productive. The rehabilitative functions and labor function do not always coincide either. The foremen are also responsible for keeping the contracts with the clients who buy prison products and services.

The guarding staff was more dissatisfied than the other occupational groups with the content and organization of work, and it found the appreciation of its work to be low. In addition it had a greater number of health problems than the other groups. The guards have, however, the least opportunities to change jobs, because their education is oriented specifically towards prison service. On the basis of this particular vocational education, there are not many choices outside the prison.

The other of the two most stressed occupations, foremen, in turn are relatively satisfied with their role in the organization, find the work challenging and appreciated, and are thus generally relatively satisfied with their work.

The foremen and those guards who serve at the work sites of the prisoners are in certain aspects in a different position than the others. They are also exposed to the risks of industrial work (noise, toxic agents and dust), and these risks interact with the psychological stressors. The recent industrialization of prison labor has greatly changed both the tasks and the work environment of the employees.

The administrators and clerical, educational, and nursing staff were the healthiest occupational groups. Educational and nursing staff also work in immediate contact with the prisoners. In hospital work, psychosomatic illnesses have been found to be more common the lower in the hierarchy one is and the more direct con-

tact with the patients one has (119). Their contacts are, in prison however, basically different from that between the guards and the prisoners. The educational and nursing staff are not so predisposed to end up with conflicts with the prisoners, as their work is rehabilitative and does not primarily set limits on the behavior of the prisoners. Staff with special education also have more possibilities for contacts with other representatives of the same occupation outside the prison. Thus they are not so bound to the prison community as those in other occupations. A source of frustration is, however, the fact that the prison can hardly increase the possibility of the exconvict to manage in society after being released from prison. The rehabilitative activities may also contradict other activities of the prisons to some extent. The situation is apt to create role conflicts among the personnel.

Workhours and shifts

One possible source of aggravated stress among the guarding staff is shift work. A majority of the guards have periodically rotating workhours.

It was not possible to study the effects of shift work separately because among the guarding staff there are only a few persons who do only day work. The shift work is thus contaminated by occupation.

According to many studies (228) shift workers have problems with, especially, stomach and sleeping disturbances more than workers doing regular day work. Also psychological problems are more common among shift workers than day workers according to certain studies (197). Cardiovascular disturbances have not been found to be more common among shift workers (228).

The possible problems of shift work have been somewhat avoided in the present study group by the favorable arrangement of shifts. A night shift is usually followed by several free days, which guarantee a relatively long period of recovery. This type of arrangement offers a greater possibility for adaptation than the usually applied system of a continuously changing shift arrangement.

Institution characteristics

The objective global characteristics of prisons did not have any strong effect on the stress or health status of the personnel. The size of the prison, described by the number of prisoners, was the only one of these characteristics that formed interpretable explanatory interaction effects with the other predictors. The overcrowding of prisons also had some effect on both the negative and positive aspects of health. The effect of overcrowding, which was one of the strongest perceived complaints of the personnel (136), may have been partly diminished by the fact that the level of overcrowding varies continuously and thus the picture given by a cross-sectional statistic may be restricted. The security level of the prison was not important from the health point of view. There was however, some trend towards a lower level of health status in the maximum-security institutions. The low effect of this variable may be partly due to technical reasons. Most of the prisons are maximum- or medium-security institutions, which means that only a minority of the personnel works in minimum-security institutions. The distribution of the information was thus skewed. Another reason may be the fact that the studied minimum-security prisons became so only less than a year before the collection of the data for this study. The possible long-term effects of the change probably were not yet evident.

Living surroundings

Living on or outside the prison grounds did not affect the stress and health indicators. This result was somewhat surprising, as a residence outside the immediate vicinity of the prison was expected to provide a greater opportunity to get away from the pressures of the prison and, on the other hand, offer more variation and possibilities for enhanced social interactions. This finding was also surprising on the basis of the reported wish to live outside the prison grounds by a majority of those who lived inside. One possible explanation is that the persons living on the prison grounds are younger people who have not yet acquired private lodgings.

Work characteristics

Among the studied specific characteristics of work, there were some powerful predictors of stress reactions and health status. Most of these are generally recognized work stressors. The most important was the challenge of work, which was statistically significantly related to perceived symptoms, perceived health status indicating chronic health disturbances, and the indicator of positive health, social activeness. The importance of the challenging, developing nature of work as a source of gratification of self-actualization needs and the achievement of common goals has been reported repeatedly. Its carry-over to general social activeness and participation has also been supported by empirical findings (81, 138, 187).

A conflict of motives which in the present study reflected frustration with the rehabilitative aims, inferred from regretting a perceived lack of possibilities to communicate with prisoners and the primary difficulty of making contact with them, was an important predictor of perceived symptoms. Corresponding sources of possible stress exist in all fields of health and social care. Indications of this situation have been found among practical nurses (127). Another conflict situation, role conflict, also predicted perceived symptoms showing that counteracting expectations directed towards one's work were perceived as stressful.

Organizational climate, in this study a composite scale which included items measuring possibilities for decision making, information, feedback, and recognition by supervisors, was a powerful predictor of perceived symptoms. Many other corresponding findings have been presented in the literature, as discussed in part III of this report. This finding can perhaps be compared to the negative consequences of organizational frustration (252). Organizational climate factors were however not related to the indicator of chronic (physical) health status nor with blood pressure.

The relations of insecurity at work showed the opposite trends. It had a noteworthy relation only to perceived health status and blood pressure. In interpreting the interrelation of insecurity and perceived health status both possibilities of

the direction of the causality must be taken into account. A chronically low health status (and old age, which correlates with it) may be a basis for an increased awareness and sensitivity of possible dangers for one's own security at work. The same interpretation does not, however, hold in regard to blood pressure. Blood pressure did not correlate strongly with illnesses or poor general health status. In addition, hypertension is often a symptomless, unperceived state, which cannot as such be considered as a possible basis for a heightened worriedness about security. Chronic hypertension is, however, considered as one indication of long-lasting and strong stress in stress theories. A tentative interpretation could be made on the basis of the progressive phases of the stress process (122). Elevated blood pressure and the pure general health status represent progressed stages which perhaps diminish the resistance against a threat caused by risks for personal safety.

Quantitative work load was related only to perceived symptoms. The quantitative work load in the studied prisons was a factor which was strongly related to the increasing number of prisoners, while the number of personnel and the facilities have remained unchanged. Overcrowding is however a relatively recent phenomenon. Its consequences can hence be perhaps seen only in the first-order responses to stress, ie, perceived symptoms without a relation to more chronic disturbances of health.

Unexpected was the finding that responsibility was not related to any of the stress and health indicators. The responsibility scale also covered an item of responsibility for other people. The present result deviates from previous findings emphasizing the importance of the responsibility for people as a stress factor (39).

Job satisfaction was related to almost completely different work characteristics than the stress and illness indicators. The best predictors of job satisfaction were the following: organizational climate, difficulties with prisoners, variability of work, human relations at the workplace, and satisfaction with salary. All these factors represent work dimensions which have previously been found to be determinants of job satisfaction (110, 168, 267). These factors explained one quarter of the total

variation in job satisfaction among the studied prison personnel.

Job satisfaction in turn was predictively related to stress and health indicators. There were thus indications that job satisfaction can be considered as an intermediary phase in the theoretical models on work and stress. In the explanatory analyses of stress reactions certain work characteristics can consequently be covered by a global intermediary response, ie, job satisfaction. This possibility not only increases theoretical clarity but is also of practical importance, as the explanatory analyses of stress reactions at work often suffer from sets of work-related predictors that are too large.

Length of service and age

The total exposure to work stressors is reflected by length of work experience in an occupation, which naturally reflects also many other factors. Length of service in prison was a strong predictor of both stress reactions and health indicators. Length of service usually has a strong correlation with age. In this study the predictive power of age was less important than that of the length of service. This finding may be partly due to the fact that the study represented mainly older age groups and only certain younger age groups. The distribution of age in the study sample did not thus cover the whole age range of the prison employees. Age was a powerful predictor of only the indicator of chronically lowered, primarily physical, health status, a fact which has been demonstrated also in some other studies (50).

Self concept and social support

The characteristics of self concept which had the strongest relation to stress and illness indicators were optimism/pessimism and self-control. The first characteristic is related to trait anxiety and is thought to increase a person's susceptibility to become anxious and, accordingly, stressed in threatening situations (253). On this basis the result of this study is logical and interpretable. It is, however, for methodological reasons somewhat less convincing. It is difficult to differentiate the indicator

of optimism/pessimism and hence trait anxiety from some of the studied symptoms considered as stress reactions and indicators of a lowered level of health. As discussed earlier, a corresponding item has sometimes been included in the "response" scales. A cause-and-effect confusion has to be taken into account also in the evaluation of the results on the relation of self-control to stress and health indicators. The indicator of self-control was closely related to other items reflecting ego strength, which is considered one coping resource and a cornerstone of mental health. The main problem in interpreting the role of self-control in this study is that it may also be affected by existing stress and health problems.

The indicator of positive aspects of health in this study, ie, social activeness, was related to quite different self-concept characteristics than the stress and illness indicators. Extroversion, dominance, and authoritarian attitudes can be considered logical correlates of social activeness. Perhaps they also provide a basis for a stimulating and health-supporting way of life. The interpretation of the finding is restricted by the limited scope of the indicator used for social activeness as a measure of the positive aspects of health. The indicator covered only certain of its essential aspects.

Perceived social support represented another type of interacting variables, and it showed the expected buffering effect on stress reactions.

METHODOLOGICAL DISCUSSION

The present study was based for the most part on data from questionnaires, which were filled out by the respondents without the help of interviewers in a partly uncontrolled situation. Although the questionnaire survey is a widely applied method for gathering data in the behavioral and social sciences, the limitations of this data-gathering method should be taken into account in a discussion of empirical results. Especially when single questions are used as indicators of concepts, instead of sum scales comprising a larger number of original items as, eg, in psychological tests, the reliability of the indicators

can be expected to vary a great deal. This situation is particularly problematic in studies like in the present one, in which single questions are used to represent underlying dimensions of the original questions, extracted as factors in the factor analysis. It is also problematic in questionnaire surveys to estimate the reliability of the individual questions, since it is only seldom feasible to include sufficiently parallel questions in the same questionnaire. This problem also restricted the estimation of reliabilities in the present study, in which, however, a definition of at least the lower limits of the reliabilities of the most important single questions was attempted. The reliabilities of some scales turned out to be acceptably high, mainly because of the large number of the original items included in the same scale.

The main result of the aforementioned shortcomings of the questionnaire survey in general, as well as in the present study, is that the statistical estimates of the relationships among variables remain rather low. It can be expected that, if indicators with higher reliabilities had been used, the empirical relationships among the variables would have been higher. Since the reliabilities of most of the variables could not be properly estimated, the estimates of the relationships among the variables could not be corrected for the effects of the reliabilities. Nevertheless, as most of the error variance in the variables was random and due to low reliability, it can be concluded that the statistical estimates of the relationships among the variables can be compared with each other in strength, but that the level of the empirical relationships represents a lower limit of the true relationships among the concepts than if indicators with higher reliabilities had been used in the study. This conclusion clearly supports the need for further methodological work for the development of better indicators of the concepts included in this study so that in further studies these basic questions of empirical measurement could be more appropriately solved.

The AID technique was found to depict the main predictors and their interactions, and the resulting AID trees turned out to be easily interpretable in terms of the

adopted theoretical framework. Since the results of the AID technique are, to a great extent, qualitative in nature and they yield only the best predictors, it was necessary to complement it with additional multivariate analyses.

The final analyses were conducted with the application of the GLM, both as a stepwise analysis of variances and as a stepwise regression analysis. This method proved to be efficient in pinpointing the main indicators and their relative explanatory power. The analyses based on the GLM were statistically appropriate since the residuals of the dependent variables, after the removal of the predicted values of the predictors included in the model, turned out to distribute randomly according to the graphic plots provided by the computer program. The results of the GLM were also interpretable on the basis of the adopted theoretical framework, although the problems caused by the varying reliabilities of the predictors should be taken into account in conclusions applied to situations outside those investigated in the present study. The results did not suggest that the fact that the analyses were based on the linear model only, without the inclusion of any interactions of the predictors as additional predictors, had somehow affected the results. It cannot be expected that an analysis with a more complicated model would have provided essentially new information in addition to the results obtained in the analyses with the GLM.

GENERALIZATION OF THE FINDINGS

On the basis of the acquired results, the generalizing conclusion can be drawn that institutional work among a population deviating from social norms includes certain special stress factors.

The possibilities for the generalization of the findings of the study are discussed from two points of view. It is important, on one hand, to evaluate the extent to which the findings of this study can be generalized to other occupations with corresponding work conditions and the same work features. On the other hand, the pos-

sibilities for theoretical generalizations on the basis of the adopted theoretical framework should be discussed.

The prison represents a type of organization which is bureaucratic and authoritarian on the basis of its goals and principles of function. The population, which is the object of work, represents a subpopulation of society with behavior deviating from social norms. The work environment of prison personnel is an institution for which strengthened physical control is typical, in addition to the general characteristics of institutional organizations. On this basis, the findings of the study on work load and occupational stress factors can probably be generalized to mental hospitals, institutions of corrective education, the army, and the police. Certain of the findings concerning client contacts and work motivations may also be applicable to other work in health and social care.

In the considerations of the occupational findings, the possible selection to and from an occupation has to be taken into account. Persons going into a particular occupation may have similarities in their social background, personality, attitudes, interests, and occupational aspirations, as discussed earlier in this report. This selection effect may even be strengthened by organized occupational counseling or selection procedures. This possibility holds true also in the field of the care of prisoners. The selection effect may be expected to be stronger in city prisons than in distant rural areas, where other choices are scarce. After the primary selection to an occupation, the later selection from the occupation often increases the selective effect of the workers remaining in an occupation. The latter effect may be somewhat restricted for prison personnel, especially for the primary guards who have a fairly short and specific education. Thus they have restricted possibilities for vocational choice outside prison work, at least to white collar occupations. The strong variation in the tasks and educational background of various occupations in pris-

ons lessened the effect of occupational selection in the total study population and, to some extent, also the homogenizing effect of the work environment. Due to these factors enough variation was also left in the objective conditions of work in order to study the relations between work and the reactions of the personnel.

The findings of the present study were congruent with the adopted stress theory. All expected relations between the predictors of stress and health outcomes were not verified however. All the found relations, instead, were interpretable on the basis of the theoretical stress framework of the study.

The cross-sectional nature of the study set limitations for the drawing of conclusions about the causal relations of the findings. The possible relations between the studied stress and health indicators, on one hand, and the perceived work environment, including subjective stressors, on the other, was not one-directional. This situation holds true also for the self concept of the workers. The development of stress with further progressing disorders is usually based on continuous interaction between the person and the environment. The work conditions are evaluated partly with a reference to one's own state. Personality and, accordingly, self concept, in turn, is not a static state which has importance only in a predisposing or moderating role in the maintenance or disruption of equilibrium. Self concept may also be modified by work and other life experience and by strong changes in one's health status, whatever their causes are.

The actual results of the study reflected only interrelations among the indicators of concepts with no reference to causality. On the basis of a justified theory and advanced methods of data analysis the weaknesses in the study design and material could be somewhat controlled. Many of the weaknesses of studies of the present type could be avoided with the longitudinal approach; admittedly though the longitudinal study is burdened with other uncontrollable phenomena.