

cratic and static easily end up not only with role conflicts but also with interpersonal conflicts with those who are involved in maintaining the status quo.

In later studies correlations between perceived interpersonal problems and stress reactions have been reported repeatedly. Problems in relations among staff have been found to be related to a large number of psychological stress reactions among practical nurses (127). Interpersonal problems were among the most important work stressors in relation to psychological stress reactions, especially depression, also among electronic workers (157). In the latter study the conclusion was drawn that contact problems are secondary by nature, ie, based on other problems in the work environment.

Communication possibilities among staff members have been found to be one explanatory factor for the more beneficial influence of small institutions in comparison to big ones. A more fluent and close communication in small than in large organizations has been shown to modify nurses' job satisfaction in psychiatric hospitals [reviewed by Rump (227)].

It is important to note that not only problems in existing relations may be sources of stress, but also a lack of possibility for communication and contacts. Short-term sickness absences have been found to be more common among those workers who had only an eye contact with each other in comparison to those who had a possibility for closer communication with co-workers, other things being equal (24).

The role of interpersonal relations has been found to be conditional in some studies. The effects of quantitative work load on physiological functions have been found to be dependent on the quality of the relationships between superiors and subordinates and among co-workers. For instance diastolic blood pressure was related to work load, but only among those employees who had poor relations with their immediate superiors. Relations with immediate subordinates had an even stronger effect on blood pressure than relations with superiors (71). These findings indicate that good relations at the workplace act as a buffer against the stressful effects of work load. The condi-

tioning effect of social relations was not, however, realized in the relation of work stressors with psychological stress reactions.

STRESS FACTORS OUTSIDE WORK

In the study of work stress a large proportion of the variation in stress reactions, which are often perceived symptoms, usually remains unexplained. This finding has led to an additional emphasis on possible stressors outside work.

One recently much-studied group of such stressors are changes in life which, according to the related theory, represent situations with a necessity for the individual to adapt. Repeated demands on an individual's adaptive capacity are possibly supposed to exceed his resources and lead to disease. A whole research tradition has developed to study the impacts of changes in central aspects of life on an individual's health [reviewed by Cleary (45)].

Research results have shown that such health disorders as depression, coronary heart disease, and various other physical diseases increase in number and intensity in relation to previous stressful events like job changes, death of a meaningful other, divorce, etc (64, 215). In the studies on the effects of life changes on health, all types of changes have been treated qualitatively equally, the grading being only quantitative. Behind this approach is the notion that any change in a person's environment creates new challenges and mobilizes his adaptive capacity, ie, causes stress in Selye's (241) sense. Criticism has, however, been raised on the possibly different consequences of favorable versus unfavorable events. Some studies have shown somewhat opposite effects of the so-called gain and loss events on health (63, 265).

MODERATORS OF STRESS

Personality

Individuals differ in their susceptibility to stress under exposure to specific stress factors in work, and also in their psychological, physiological, behavioral, and sociocultural responses to stress, ie, in re-

spect to symptoms of strain and the resulting type of disease. The individual characteristics that cause variation in the susceptibility to stress are incompletely known. Some studies have recently aimed at identifying and measuring the individual characteristics which modify perceptions of and reactions to the stressors in the environment. This type of knowledge is a crucial part of the clarification of the stress mechanism.

There have been three basic trends in research in this field. The first has focused on the character features (measured, eg, by the Minnesota Multiphasic Personality Inventory and the 16 Personality Factor Questionnaire) and their relation with stress reactions and illness. The second research tradition on individual factors and stress is related to behavioral patterns and illness. The third, and more recent, underlines the importance of individual strategies, cognitive or behavioral, in manipulating either the stimulus conditions, the perception and interpretation of the stimulus, or one's behavior.

The body of research results on the correlations of personality features and stress reactions is burdened by the fact that the same type of personality factors have at one time been regarded as determinants, "basic" characteristics, and thus independent variables and at another time as dependent variables and thus as characteristics of the stress reaction. Such a feature is, eg, alienation (81, 143, 152). Self-esteem is another characteristic which has been placed in almost every phase of the stress-illness link [reviewed by Tharenou (259)].

Character features have been repeatedly studied as possible determinants of stress and disease. Extensive reviews of these results have been published elsewhere (120, 123, 264). In this report they will be discussed briefly. The perceived stress and various health indices (blood pressure, electrocardiographic pattern, pulse rate) have been found to vary according to some personality characteristics (54).

Those who were both free from trait anxiety and emotionally stable were found to have fewer signs of cardiovascular disorders. Personality variables were also found to play a role in determining effectiveness in work and professional success and satisfaction (173). Satisfaction was the

most strongly associated with ego strength, venturesome and socially bold character, relaxed and unfrustrated condition, and general adjustment (versus anxiety). Some significant correlations were also found between personality characteristics and other success indicators. It is interesting to note the discussion of the authors with respect to the differences between the personality characteristics determining cardiovascular health on one hand, and professional success on the other. The authors stated that certain personality characteristics are favorable for success but at the same time may be associated with physical ill health. Some of the factors determining success could perhaps be interpreted as correlates of those characteristics typical to type A behavior.

Controversial results have been attained on the relation of perceived stress and concomitant strain to such individual characteristics as flexibility-rigidity and "deny bad self"-"assert good self" (39).

The responses of individuals to role conflicts in work have been found to be modified by the personality of the person in question and by the quality of his interpersonal relations. People who were generally anxiety-prone experienced the role conflicts more intensely and responded to them with greater subjective tension than persons with a lower anxiety proneness. Introverts also reacted with a more intense unpleasant response, ie, tension and interpersonal problems, to the role conflicts than the extroverts. The individually characteristic flexibility-rigidity also conditioned the relationship between role conflict and subjective tension and problems in interpersonal relations strongly (130).

Extroversion versus introversion has been found to correlate with the quality and quantity of stress reactions, together with such individual characteristics as emotional stability and an ability to control one's behavior (17, 233). Emotionally unstable persons tended to perceive more of both anxiety and its physiological correlates in the study of Schalling et al (233). The extroverts had less psychological symptoms of anxiety but more psychosomatic symptoms than the introverts.

Self-esteem has been found to correlate positively with frustration tolerance and the lack of anxiety (222).

One of the cognitive personality variables studied recently is the external versus internal locus of control, which has been discussed as one of the determinants of mental health (225). Persons who feel externally controlled, objects rather than subjects, are apt to experience feelings of helplessness and powerlessness to influence the situation. In contrast, individuals who feel they are in control of their lives experience less threat in stressful situations because they feel capable of mastering the environmental factors (16, 143). People seeking novelty and challenge in opposition to familiarity and security will remain comparatively healthy. This characteristic is related to the positive versus negative style of anticipation, and it is contaminated with the experiences and "coping training" which these people have as a secondary gain of their broader scope of living (9, 143, 194).

The locus of control has been found to influence the perception, reactions and effectiveness of the performance of owners of small business enterprises in a stressful situation. The managers classified as "internal," ie, who felt themselves as being in control of their lives, perceived less stress, responded in a more realistic manner to the situation, and were more effective in their business affairs than the "externals" (7). The correlation between self-reported stress and a belief in external control has been found to be significant in a group of teachers (150).

Among the most discussed and studied individual characteristics believed to modify the risk of stress and illness has recently been the type A versus type B differentiation of behavioral patterns. This dichotomy of characteristics has been particularly associated with the risk of coronary heart disease. The first reported findings were based on experiences from clinical practice showing a relation between certain behavioral characteristics and coronary heart disease (76, 223). Since then evidence from wide epidemiologic studies from various countries has accumulated indicating that certain individual features, approximating the complex of type A, are characteristic of persons with increased morbidity and mortality from heart disease. Among these features are a heightened striving for achievement, competi-

tiveness, aggressiveness, haste, impatience, restlessness, hard effort, and commitment to job (120).

It has to be noted that types A and B do not refer to any basic personality features, but rather are behavioral habits typical to individuals in a more or less clear form. It is not yet clarified what the possible personality characteristics are that are behind the type A and B typology. The feasibility of the type A behavior to a simple rating by observers has perhaps contributed to the fact that deeper personality traits have not been brought up as explanatory determinants of this behavioral predisposition. Nor has the relation of type A to work and occupation been analyzed in detail. Suspicions have been raised as to the extent to which the typology would be valid outside the white collar occupations from which the study groups presented mostly originate (121, 140). An important aspect for further study with respect to occupation is the possible self-selection of type A persons to occupations that reinforce basic behavioral tendencies (231).

In work life several reports on the relation of type A to stress reactions and health problems or, more specifically, on the stress-mediating role of type A have been presented [reviewed, eg, by McMichael (185)]. Health problems of type A persons may be related, eg, to objective, but not subjective, work overload without signs of job dissatisfaction, a fact which is probably based on the generally high job involvement and attachment of these persons (201). In one study, university professors and family physicians had the highest scores on the type A scale among 21 other occupations, but they showed, however, the lowest psychological and psychophysiological strain (39).

In one of the rare longitudinal studies (44), a group of young men (26 a of age) was studied who had been in a psychological test 10 a earlier. The predisposition to anxiety was found to be related to the perceived nervous strain at work, together with the daily activities at work.

Self concept

Most studies on the self concept have focused on a conscious self concept. It has

been studied with the semantic differential, Q technique, interviews, or with various rating scales. Comparisons between various groups of people and the same groups at various points in time have been presented in the literature and reviewed by, eg, Wylie (279, 280). The exactness of the conscious self concept has been inferred from the correspondence between the subjective self concept and an "objective" evaluation done by another person. The correlations between these types of ratings have usually been positive.

The relation of the self concept to psychiatric disorders has been studied in various psychiatric patient groups. The results indicate significant differences in the self images between patient groups and normal controls. The self image of patients is usually more negative than the image of normals (69), and more inconsistent (21).

A low self-esteem is often hypothesized and sometimes found to be connected with a disturbed mental state (42). Groups of normals and schizophrenics have been found to differ from each other with respect to ego strength and optimistic versus pessimistic attitude (2). Certain dimensions of self concept have been found to correlate with depressive disorders (216).

The wide use of self concept measurement in vocational counseling has indicated that the self concept has prognostic validity in future vocational orientation and success. The same has also been found in regard to an orientation to academic studies (102).

The correlations between self concept and psychological problems do not give enough basis for causal interpretations. Self concept is modifiable, which has been emphasized by some authors (102, 279).

A person's intentions are usually to actualize one's self concepts in his work (145). A person prefers occupations in which he finds members who resemble his own characteristics. Also preferred are occupations in which a person expects a possibility to use his own skills (267). On the other hand, also a person's ideal self may affect his vocational preferences (260). A vocational orientation can be seen as a result of an individual's testing of his self image with the hypothetical role image of the profession and, naturally also, of the information he has about the pro-

fession (101). More specific knowledge of the components of the self concept indicate that a positive evaluation of one's features, eg, a high self-esteem, lead to a selection of occupations which give personal satisfaction. Persons with a low self-esteem tend to select a profession which does not satisfy their expectations (144).

The better the success in an occupation has been found to be, the more realistic one's self concept and thus the fit between the personal qualities and the occupation have been (101).

In the study of occupational stress, the self concept has been considered to be either a moderator of work stress or a function of stress. Role insecurity, too heavy a work load, or work too difficult in regard to one's abilities are work characteristics that have been found to be related to a much studied dimension of self concept, lowered self-esteem (75, 130, 177). An individual's position in the work organization and work characteristics can also support or increase self-esteem. For example appreciation, when mediated by decision-making latitude in the workplace, has been found to correlate with an increase in self-esteem (56). An employee's global self-esteem is in turn strongly associated with job satisfaction, lack of anxiety, and depression, as demonstrated in several studies, reviewed recently by Tharenou (259). Ego strength and pessimistic versus optimistic life concept, measured by a self-concept test and considered as moderators of job stress, have been found to correlate with psychological and psychosomatic symptomatology and perceived general health status in a sample of Finnish seamen (65).

Social support

The importance of social support as an aid in getting through situations of acute crisis or as an additional aid in the therapy of chronic mental disorders has generally been stressed in clinical practice.

In the research on health and its social determinants repeated reports have been presented of the better health of married individuals in comparison to those who are single (43). The social support received

from spouses has been considered as one possible explanation for these differences.

Job satisfaction was among the first worklife indicators studied as a function of perceived belongingness to social groups in workplaces (55).

The effects of social support have been discussed only in a few reports on occupational stress. Support from supervisors, co-workers and subordinates has been found to modify the effects of work stressors on various psychophysiological and behavioral symptoms of stress (38, 75). Good relations in the workplace, especially with one's subordinates, was found to act as a buffer against the stressful effects of too heavy a quantitative work load. The effect was especially seen in the physiological stress reactions and less in the measures of psychological stress responses (71).

Social support from family members and supervisors has been found to be especially effective in mitigating the effects of perceived work stress on health. The effect of the support from co-workers and relatives seems less effective (185).

In a study of men forced to change jobs, psychophysiological stress reactions were measured only in those men who reported receiving low support from other people in their private life (46, 90).

PREVIOUS STUDIES ON PRISON PERSONNEL

Until recently the studies carried out in prisons have focused almost exclusively on the prisoners, their developmental background, and subcultures in prisons.

Much less attention has been paid to the position of the prison personnel. Thus there is very little information on the background of prison employees, their attitudes, and selection to the profession. Even less is known about their job satisfaction, stress, and health status and the determinants of these states in work. Those few studies which have handled the stress of prison staffs have primarily focused only on the guards.

A study of 929 guards in an Illinois prison (117) revealed that 57 % of the guards had entered the profession just because they needed a job. One in ten had specifically aspired to become a guard, and one in three had both reasons. Regard-

less of their original intentions, most guards aimed to continue with prison work for at least 5 a. The author found this contrary to the common belief that guards are interested in their job only until something better becomes available.

In the United States prison guards seemed no more dissatisfied with their job than other workers (117). Very happy with their work were 40 % and somewhat happy 50 %. The most important reasons reported for job satisfaction were the interesting nature of the work (58 %), job security (59 %), and money (40 %). Most of the guards preferred their own job over the following occupations: construction worker, garbage collector, factory worker, auto mechanic, policeman, and private security guard, of which the two last mentioned occupations would have been the best accepted. Only one-fourth would, however, have accepted that their sons become guards.

A rather general notion of the prison guards was that people are more sympathetic to the prisoners than to the prison staff. One-half of them was, however, proud of telling their occupation to others, and only a very small minority felt embarrassed about it.

A threat to personal security, danger in work, was the most important disadvantage of the job (49 %). Problems with superior officers and the workhours were the next in importance. Understaffing was mentioned by only 4 % of the guards.

Almost half of the guards regarded the attitudes of superior officers as more sympathetic with the inmates than the staff. It was obvious that the guards did not get sufficient support from the administration.

The general attitudes of the guards were found to be more liberal than usually expected. The same could be said about their attitudes towards the imprisonment and the inmates. The guards generally accepted the social, multicausal explanations of criminality. Almost half of them also considered rehabilitation as the purpose of the imprisonment. However, 26 % thought punishment was the primary task. Jacobs suspected that this situation may possibly lead the guards into a conflicting, anomalous position with greater commit-

ment to rehabilitation than the official punitive trend of the administrators justified.

A superficially surprising comparison of the long-term work stress of prison guards and teachers was made by Brodsky (32). These occupations were characterized by more similarities than differences. Both serve as caretakers of persons in their charge by force of law.

Brodsky's study covered 31 teachers and 21 prison guards who had filed industrial accident claims or had applied for service-connected disability benefits. Major complaints of the individually studied participants was injury from the pressure of their jobs. All of them had objective physical and psychological symptoms defined in a careful examination including psychiatric evaluation, psychological tests, consultation of earlier medical records, and reports from other people. No indicators of maladaptive predictive tendencies were found. Instead, the author characterized them as "hyperadapters" and "prosystem personalities."

The main reason for the problems seemed to be the changing of the prison system in a way that threw the staff into disequilibrium, ie, weakened the person-environment fit.

Various psychological and psychosomatic symptoms were the first symptoms of the chronic stage of stress. The most disorganizing finding of the staff was the dangerous nature of work, of which they seemed to have been unaware earlier. On the basis of the individually acquired health histories, Brodsky described the development of stress reactions and health disturbances with exceptional details. Common problems were unwillingness to go to work, sleep disturbances, and various somatic complaints. The most painful psychological problem was constant rumination. Self-esteem was lowered along with time. Two-thirds of those who perceived symptoms had medical findings. Females had fewer physiological symptoms, but more psychological symptoms and general fatigue, than men.

In Norway important studies have been carried out in prisons. The study of Galtung (80) in an Oslo prison has become a classic. Mathiesen (180) carried out his study in Ila prison. Both of these studies

are primarily sociological analyses of the prisons as total institutions; thus they covered the possible environmental stress factors without explicit reference to the strain of the employees. An obvious stress factor was, eg, Mathiesen's finding of a strong pressure of the inmates against the staff and a highly critical attitude towards the administration and the staff. Sundin (256) concluded that the closed system is not only a problem of the prisoners, but also that of the personnel.

In Norway opinions of the prison personnel on topics of the prison service have been recently studied (23). Various occupational groups from all Norwegian prisons belonged to the study sample comprising over 800 staff members. A questionnaire was used to gather data on the work conditions, job satisfaction, and attitudes of the prison personnel.

The main finding of the study was that the prison staff was generally satisfied with their work. The work was found interesting. Occupational differences were, however, considerable; they indicated that the special personnel, especially social and health staff, perceived their work the most favorably.

Half of all the subjects thought that routine tasks dominated their work. Personal judgement in the immediate work was found as one characteristic demand of the work, but authority in a more general sense was not found satisfactory. The interrelations of the different staff groups were experienced as satisfactory.

Half of the personnel perceived the prison service as mentally stressful but tolerable. Some staff members expressed a motivation for a more rehabilitative type of work than the present one. The majority, however, did not want more contact with the prisoners than already was involved in their primarily custodial work. The relations with the prisoners did not, however, seem to contain any serious problems. The attitudes of the personnel concerning criminal policy were interpreted by the author as primarily conservative. In practical work, instead, reforms for the benefit of the prisoners were rather generally favored by the personnel.

The study of Petersen et al (206) concerning the prison as a living environment

of the prisoners and as a work environment of the staff and the job satisfaction of the staff members was carried out in Vaestre Fengelse in Denmark. A change in role was considered as characteristic to the role of the present day prison employee. According to the authors a contemporary phenomenon is that the principles and norms behind the care of prisoners are changing and thus also the total system and the work conditions. The author emphasized that the basic problem still remains — the conflict between the maintenance of order and the execution of the imprisonment and, on the other hand, the rehabilitative function. According to Petersen et al it is going to be the main problem in prison work and a hindrance to job satisfaction.

In Sweden a study on the effects of organizational development is in progress

in the Kumla prison (148). The main reason for the organizational change was to increase the participation of the personnel in the planning and decision making through the division of the prison into smaller units with greater independence than before.

The personnel was dissatisfied with their work before the change. Especially the employees working constantly with the prisoners, guards and workshop foremen, perceived weaknesses in the organization, information, decision-making latitude, and work surroundings. The majority of the personnel expected a wider division of responsibility and decision making among the occupational groups. Greater independence of the subunits was another main expectation. The participation of the guarding staff in rehabilitative work was also a common expectation.