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Mental health in information work

M.J.D. Schalk & P.T. van den Berg

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Mental health in information work

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WORC, Tilburg University

Keywords: *mental health, knowledge work, services*

Abstract

The attention for problems related to mental health of employees in organizations is growing. However, most of the empirical studies are done in traditional work environments in which information technology and computers are of little importance. The recent increasing use of information technology has created a growing number of information processing work environments. The work in those work environments is typically done with data and can be characterized as 'mental' work.

The general hypothesis in this paper is that certain characteristics of this work are related to mental health. More specifically, this paper describes the relationship between work related factors and mental health among employees in a typical information processing environment: an insurance company.

First, we will discuss the concept of mental health. Next, we will summarize the results of a number of studies on the determinants of mental health in information work. After that we will present the results of our study. In the discussion of the results we will try to integrate the findings into a model of antecedents and consequences of mental health, applicable to information work.

1. Introduction

The concept of mental health.

There is no clear definition of the concept 'mental health'. In the past health has been defined as 'absence of illness'. This negative definition has been abandoned and now health is seen as 'an optimal state of somatic, psychic and social well-being' (WHO, 1958). However, this definition is not very clear. For example, what is meant by 'well-being'? How can one find out if there is an 'optimal state'? The problems which arise when one wants to use this definition of health are related to the fact that health is a changing state on a continuum between two anchors, 'really ill' and 'really healthy'. Between those two clear states there is a large area which may be called 'grey': people are not entirely healthy and not entirely ill. Their position on the 'health continuum' is influenced by the way they perceive their own health and situation. The meaning people give to situations plays an important role in their perception of health (Schalk, 1989, 1990).

There are several operationalizations of the concept of mental health. In many studies general self-report measures are used. The most important measures are the Psychiatric Epidemiology Research Instrument (PERI: Dohrenwend, Oskenberg, Shrout, Dohrenwend & Cook, 1981; a 25 item psychological symptoms checklist), the Crown-Crisp Experiential Index (CCEI: 48 items with six subscales; Crown & Crisp, 1979), the Psychiatric Symptoms Index (Ilfeld, 1976; four factors: anxiety, depression, aggression and cognitive problems), and the Langner-22 Index of Mental Health (22 symptoms, mainly psychosomatic, but also depression; Langner, 1962).

Some other instruments have especially been developed to measure mental health related to work. Examples are the Work Related Emotional Distress Scale (6 items; Kandell, Davies & Ravies, 1985), the measure for Psychological Well-being (two subscales: anxiety and depression; Caplan et al., 1975) and the measures for Well-being and Mental Health of Warr (1990).

Mental health has to do with the way in which people are able to adapt to the (changing) demands of the environment (Levi, 1984; Cooper & Baglioni, 1988). Because the work situation is an important part of the lives for a large number of people, we expect that demands and changes in the work situation have an impact on the mental health of people who are working. It seems that this is the case. For example, in 1947 Fraser reported the results of a research study in which he assessed the incidence of neurotic illness of blue collar employees in a number of machine plants. Fraser

concluded, that at least 30 % of the employees had psychic disturbances. In 20 % of the employees there were mild forms of neurosis. But in 10 % there was a 'real' neurosis, which made the employee less able to do his work (Fraser, 1947).

Information work

In the last years at least three important changes have taken place, which affect the nature of work (Roe, 1990). In the first place there is the shift from an industrial economy to a service economy. Secondly, there is the growing use of information and communication technology. In the third place there is a process of social change, which is related to growing welfare and the growing participation of employees in decision making in companies. The problem of ill mental health of employees is now especially prominent in service organizations. Mental overload because of work, for example, is a frequently mentioned cause of ill mental health.

Despite the fact that the data show that ill mental health is a growing source of disability and illness (e.g. CBS, 1987), relatively little empirical research has been undertaken in this area. 'There is insufficient information on the prevalence of psychological morbidity in the workplace' (Mickleburgh, 1986). 'Although it has long been suspected that occupational pressures might have adverse effects upon workers' health and well-being, it is only comparatively recently that empirical studies have been set out to determine which factors underlie the relationship between occupational stress and mental or physical health (Furnham & Schaeffer, 1984; 295).

Below we summarize some findings on antecedents of mental health in information work. There are two kinds of studies, i.e. studies among samples of employees doing paid work (among others employees who do information work), and studies on samples of mental information workers. First we will go into the results of the general studies.

Krupinski (1984) reports data on 1133 persons who did paid work in Australia. Medical students gathered the data by means of interviews. An index was computed for psychological disturbance (based on frequency, gravity and importance of certain symptoms). Furthermore questions were asked about the perceived importance of a number of work-related aspects, and the degree to which the work situation fulfilled the needs of the employee. There were no significant relations between professional group, income, and number of work hours on the one hand and mental health on the

other hand. It was clear, however, that those employees who did not see their expectancies realized had a significant higher number of psychic complaints. This has lead Krupinski to the conclusion that 'the subjective perception of specific aspects of work was apparently more important than the objective conditions of the latter' (Krupinski, 1984; 64).

Furnham & Schaeffer (1984) tried to verify Holland's (1973) theory in 82 fulltime employed adults. They related the number of psychic complaints (assessed by means of the Langner-22 index of mental health) to P-E fit, work satisfaction and a number of demographic characteristics. There were significant product-moment correlations of job satisfaction (-.41), sex (female, -.23) and P-E fit (-.24) with mental health. Age and education had no significant relationship with mental health. Dooley, Rook & Catalano (1987) surveyed 8376 breadwinners from California (U.S.A.). These persons were asked questions in the period 1978-1982 in a telephone trend survey about, among other things, life events, social support, job security and mental health (PERI-scale). Age, sex, social status, undesirable non-job life-events, job social support, non-job social support and perceived job insecurity were all related to mental health. In a regression-analysis 22 % of the variance in mental health was explained.

In research among samples of information workers, the following results have been found. Karasek, Gardell & Lindell (1987) used a random sample of the members of a union for white collar employees in Sweden. The data of 8700 full-time employees, broken down by age and sex, were analyzed with logistic regression to assess the relationship between stress and health. Significant 'odds ratios' for the relationship between a number of dependent variables (depression, exhaustion, job dissatisfaction and absenteeism) and several independent variables were found for age, marital status, work load, role conflict, role ambiguity, control, development possibilities, social support, travel time, working spouse, children, home problems and income, for males as well as for females.

Billette & Piche (1987) carried out a study among 350 data entry clerks working in two large pools within the Quebec Public Service Administration. The sample consisted of regular and temporary full-time workers (N = 189 and 161). The psychiatric symptoms of both groups were compared. The psychiatric symptoms were also compared with these of a norm-group of female employees (N= 517). With respect to the incidence of psychiatric symptoms (operationalization: a higher level of symptoms according to the Ilfeld Index) Billette and Piche report a higher level of all psychiatric symptoms among regular working data clerks (Billette & Piche, 1987). Billette & Piche also calculated correlations between a number of independent variables and psychiatric symptoms. They

found significant correlations for intrinsic dissatisfaction, disciplinary control, monotonous work, work load, and relations with colleagues. In a regression with psychiatric problems as a dependent variable, the R^2 for the regular data clerks was .23 (monotonous work, work load and relations between colleagues) and for the temporary data clerks .27 (monotonous work and work load).

Cooper & Roden (1985) assessed the mental well-being and job satisfaction of 318 tax officers in Great-Britain. To assess the degree of mental well-being they used the CCEI. The results of this research show significant relationships in multiple regression analyses for the following variables: qualitative overload, sex (female tax officer), quantitative overload, type A behaviour and longer length of service.

The reviewed studies show that the domain of factors which may be associated with mental health has not yet been thoroughly investigated. The results of the general studies suggest that job perception (satisfaction) is a better predictor than life events. In information workers 'work load' is often found as an good predictor of mental health. A lot of variables are related to mental health, i.e. personality, demographic variables, non-work factors, work characteristics and stress-perception variables, are related with mental well-being.

- Personality and demographic variables related to mental health are: type A behaviour, age, sex, income, marital status, length of service, and full-time working.
- Important non-work factors are: social status, non job life events, home problems, children, working spouse and non job social support.
- Work characteristics are: job life events, job social support, relations with colleagues, control, disciplinary control, development possibilities and monotonous work.
- Stress and perception variables are: job satisfaction, intrinsic dissatisfaction, perceived job insecurity, (qualitative and quantitative) workload, role conflict, ambiguity, misfit expectancies and P-E fit.

A broad research study, in which different characteristics of the work situation are taken into account has not been done so far. The research reported in this paper tries to assess the antecedents of mental health in a great number of work related aspects.

2. Method

Sample

The data were collected in an insurance company in the South of the Netherlands among employees who were employed with the organisation over the entire period of 1983 and 1984 (N = 993).

Measures

The independent variables were gathered from different sources. From the personnel files we derived demographic data, such as age, sex and time in employment. Heads of departments were contacted to get information about characteristics of the departments, such as aspects of input and output, the transformation process, communication processes and personnel characteristics. Employees provided information about characteristics of their job, work perception, satisfaction and health complaints. Also covered were: life events, habits (drinking, eating, smoking, sports, etc.), personality (type A behaviour), work values and P-E fit. Medical files contained data about the health condition and case history of employees. Information on the reliability of scales and measures can be found in Schalk (1989).

Mental health was assessed by a part of a questionnaire for employees in which nine questions were asked about psychic complaints, such as being more tense, rapidly irritated, feeling less pleasure in life, being more worried about things, etc. The question asked was to what degree one had experienced changes in feelings and moods in oneself in a particular period as compared with the usual situation. Cronbach's alpha of this scale was .94.

Procedure

Multiple Linear Regression analyses were done with mental health as a dependent variable. Because of the great number of independent variables involved in this research (132) we reduced the number of independent variables step by step. The following procedure was followed. First regression analyses were done on groups of about 20 variables in a certain domain (objective characteristics of a person, characteristics of the non-work situation, person-environment fit, characteristics of the job and the department. Only variables with a significant t-value were selected.

With the number of variables reduced in this way a regression analysis was done once more. We selected variables with a significant relation with mental health ($p < .10$). The reported regression analysis was done on a selection of the total group of independent variables. Health complaints were excluded as independent variables. The reason for this is that mental health, psychosomatic complaints and worries about health and visits to a general practitioner are relatively strongly related (zero order correlation between mental health and psychosomatic complaints is .52; between psychosomatic complaints and worries about health and visits to a general practitioner .27; and between mental health and worries about health and visits to a general practitioner .07). Because of this strong relationship the effect of work related variables on mental health may be masked by health perception variables.

3. Results

The results of the regression analysis are given in table 1. The percentage of explained variance is 27 percent. This is relatively high. The main conclusion from the table is that mental health is related to a great number of different work and non-work factors. Some variables have to do with P-E fit; there are objective characteristics of the person, of the department, and the job. Perception variables are important antecedents as well: they include perception of aspects on different levels, like e.g. organization policy, work perception and self perception.

insert table 1 about here

4. Discussion

The general conclusion which can be derived from the reviewed studies and our research is that a broad range of variables in different fields is related to mental health in information work.

The question we are still facing is how to integrate the findings into a model. We propose the following model (figure 1), originally developed by Schalk (1989) to explain the incidence of short term absenteeism of employees, to clarify the role of the antecedents of mental health.

insert figure 1 about here

The central concept in this model is the 'phenomenological' meaning of the work situation to an individual. The phenomenological meaning can be divided into three areas, which are interrelated and act together as a 'Gestalt'. The first area consists of the meaning attached to the adjustment of the person's needs, capabilities and education to the demands and rewards coming from his job. The second area relates to the way in which the individual perceives the outer situation (environment: colleagues, work, etc.). The perception of the inner situation (health, satisfaction, etc.) is the third area. The interpretation of the individual is always based on 'objective' characteristics, of the environment or the person himself. Mental health is thus a part of the inner situation.

In our model the phenomenological meaning has a direct influence on health and work behaviour. The phenomenological meaning, in turn, is influenced by personal and environmental characteristics. These 'objective' characteristics exert a direct influence on health and work behaviour as well. As shown by the model, we suppose that mental health should be seen as an integral part of the 'Gestalt' by which employees assign the situation. Therefore, the person's perceptions (of own health, satisfaction, stress, P-E fit, work situation) should not be seen as a determinant of mental health, but rather as related to mental health. E.g., as we see it, mental health and work perception are interdependent.

The only 'real' determinants of mental health are variables related to objective characteristics of the person, the work situation and private life. In our research such factors are for example:

- characteristics of the person: going out, education, time urgency;
- characteristics of private life: life events in relations;
- job characteristics: contacts with others, demand for learning, having meetings in the evening, full-time work;
- characteristics of the department: degree of automation of the department, influence on the input of the department.

Among the variables associated with mental health (related to the 'meaning') are:

- work overload;
- time pressure;
- perception of the job (satisfaction with job quality, future prospects, technical-organizational stressors);

- perception of the organization (perceived development of individual personnel policy of the organization, perceived development of a policy toward fit employee-work in the organization);
- psychological stressors;
- P-E fit (fit/misfit working in an organization with an open policy, fit/misfit helping others);
- motivation: work commitment.

Among the health behaviours are:

- heartbeat frequency;
- sleep quality.

A good example of how mental health and other perceptions are related can be derived from the questions on organizational policies. We asked employees what they thought about certain HRM-policies of the organization (P-E fit, attention for individual employees). One should not expect that there would be a relationship between the opinion of employees towards the organization policies and mental health. However, employees with a good mental health perceive the policy of the organization in a different way compared to employees with many psychic complaints. When we put the variables of our research in the proposed model, the model becomes as follows (figure 2):

insert figure 2 about here

The objective factors are determinants of mental health. P-E fit, perception variables and most health symptoms can be seen as indications of a global idea people have of themselves and of the environment. Mental health is a part of this global idea and is in this way related to other perception variables. Perception variables are thus no real determinants of mental health but are related factors. Further research should be done to assess the validity of this model.

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Table 1: regression on psychic complaints of variables excluding health complaints
in an insurance company (N = 993) (meaning indicates the relation with
a large number of psychic complaints)

VARIABLE	BETA	T-VALUE
more work overload	.16	5.50
lower satisfaction job quality	.16	5.12
more psychological stressors	.14	4.13
job content: more contacts with others	.10	3.61
higher time pressure	.11	3.60
demand for learning	.09	3.33
lower satisfaction future prospects	.09	3.06
higher heartbeat frequency	.08	3.05
more technical-organizational stressors	.09	2.96
higher degree of automation department	.08	2.88
not having meetings in the evening	.08	2.87
full-time work	.07	2.54
more influence on the input department	.07	2.53
greater perceived development of individual personnel policy of the organization	.06	2.25
low sleep quality	.06	2.22
more/regular going out	.06	2.20
lower education	.06	2.21
higher number of life events relations	.06	2.17
more time urgency	.07	2.16
misfit working in an organization with an open policy	.06	1.93
lower perceived development of policy toward fit employee-work in the organization	.06	1.90
lower work commitment	.06	1.89
fit helping others	.05	1.77
R	.54	
R 2	.29	
R 2 adjusted	.27	

Figure 1: A model of the antecedents of health and work behaviour

Figure 2: An empirical model of the antecedents of health and work behaviour

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