

## THE WORK ENVIRONMENT AND MENTAL HEALTH\*

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This paper reviews the results of several empirical studies which have attempted to determine the relationships between the work environment and mental health. Various aspects of employee behaviour have been selected which give indications of the degree of mental health being experienced by the employees.

In our culture work is highly valued, not only as a source of income but also as a means of satisfying the basic needs of the individual. Often, only at work does the individual achieve personal independence, develop his meaningful social contacts, express his creative interests, make a contribution to society and achieve status in the eyes of his fellow man. If work, or the work setting does not meet these needs, profound changes may occur in the individual's personal and social behaviour. Levinson (1965) puts forth the concept of reciprocity to help explain the relationship between man and the organization in which he works. The employee has certain expectations which he feels the organization should honour and the organization has its expectations about what the employee should do.

Since studies such as the Hawthorne Experiments of the Western Electric Company in the early 1930's showed there was a relationship between the mental health of an employee and his productivity, the topic of management and mental health has become of increasing interest to business researchers and administrators.

A number of reviews of mental health in the employment setting have been written. Rennie (1947) makes an historical review of the literature beginning with a look at C.C. Burlingame's study of the Cheney Silk Company in 1916, and ending with studies carried out in late 1944. Zander and Quinn (1962) review the past research of the Institute for Social Research into the relationship between conditions in the social environment and resulting behaviour. These were (a) affective states, both pleasant and unpleasant; (b) contact with reality; (c) self evaluation; (d) motivation to grow and to use abilities; and (e) maintenance of stable interpersonal relationships. McLean's (1966) review is similar to Rennie's in that it is basically an historical review of the literature prior to 1965 with several pages devoted to what the future might hold in store. In this section he concludes that greater emphasis will be placed on preventive mental health programs in industry with both the clinical disciplines and the behavioural sciences playing an important role.

Before proceeding with the present review it is essential to understand what is meant by 'mental health'. Different authors have proposed various definitions. Tallman (1944) considers good mental health as the ability to live with one's self and one's fellow men in reasonable comfort without self-deception and despite recognized shortcomings. Menninger (1937) defines mental health as "the adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness. Not just efficiency or just contentment or the grace of obeying the rules of the game cheerfully. It is all of these together. It is the ability to maintain an even temper, an alert intelligence, socially considerate behaviour and a happy disposition." Kornhauser (1965) in his study of the

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psychological condition of workers in a modern mass production industry conceptualized mental health as "a loose descriptive designation for an overall level of success, personal satisfaction, effectiveness, and excellence of the individual's functioning as a person".

An operational definition of mental health was developed by Solley and Munden (1962) by interviewing fourteen senior psychiatrists and psychologists of The Menninger Foundation. The result of their study showed that people who are considered to be mentally healthy exhibit certain kinds of behaviour which were defined as: (a) having a variety of sources of gratification in their relations with others, in their work and in their ideas; (b) recognizing and accepting their personal strengths and weaknesses; (c) treating others as individuals and being sensitive to individual differences among people; (d) spontaneously and naturally using their capacities to fulfil personal needs and in the service of others; (e) flexibility under stress. This was the definition used by Levinson, Price, Munden, Mandl and Solley (1966) in their study of a utility company in the mid-western United States. The authors recognized however that those who are defined as displaying good or poor mental health vary from group to group, class to class and culture to culture in human society.

When one tries to find a single criterion against which to judge an individual's behaviour or beliefs one quickly realizes that there is not one but many criteria which are used by researchers. In the area of physical signs, MacMillan (1963) has described some of the common indications of poor mental health. Included are prolonged chronic exhaustion which is unrelieved by rest, feelings of chronic restlessness and inability to concentrate, hyperventilation or deep sighing, tension headaches, excessive sweating and insomnia. While these signs would be more obvious to the person himself Himler (1964) outlines three indicators of poor mental health which could be used by management in evaluating their employees' mental health. He suggests that supervisors be alert to changes in the employee's productivity, alterations in the employee's adaptive capacity to cooperate with others in a work group and manifest evidences of emotional ill health, for example anxiety, aggression, depression or alcoholism.

With regard to criteria for mental health researchers, Jahoda (1958) carried out an extensive study into the various definitions used by researchers in past studies. She criticizes the use of normality, the absence of mental disease and various states of well-being as criteria for determining positive mental health: normality, because there is difficulty in choosing between statistical frequency concept and normality as a normative idea of how people ought to function; mental illness, because it is difficult to define this concept; and states of well being (which is ascribed to by Menninger) because it assumes that happiness or contentment needs no special referent or qualification in relation to environmental context, that is to be happy under conditions of misfortune and deprivation cannot seriously be regarded as a criterion for positive mental health. Jahoda groups the various acceptable definitions or criteria together into six categories. The criteria used in each are:

1. *Attitudes toward the self.* The mentally healthy attitude toward the self is described in terms such as self acceptance, self confidence or self reliance.
  2. *Growth, development and self actualization.* This group of criteria is concerned with what a person does with his self over a period of time. This assumes that growth will be for good and not for evil.
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3. *Integration*. This refers to the relatedness of all processes and attributes in an individual. It is usually treated with emphasis on either a balance of psychic forces, a unifying outlook on life or resistance to stress or anxiety.
4. *Autonomy*. Some researchers consider a person mentally healthy if he exhibits self-determination, autonomy or independence. The person is inner directed.
5. *Perception of reality*. The perception of reality is considered mentally healthy when what the individual sees corresponds to what is actually there. Perception is free from need distortion. The mentally healthy person treats the inner life of other persons as a matter worthy of his concern and attention.
6. *Environmental mastery*. The ability of the individual to perform adequately in his environment is seen by many authors as a criterion of positive mental health. Significant areas are the ability to love, adequacy in work and play, adequacy in interpersonal relations, capacity for adaptation and adjustment, and efficiency in problem solving.

To these six categories of Jahoda, French and Kahn (1962) have added five more which bring in negative criteria and physiological measures of mental health. These are:

1. *Affective states*. These are widely used as criteria of mental health, or at least as indicators of mental illness, for example, manic depressive cycle, states such as anxiety, hostility, guilt, self-righteousness, shame and pride, self-esteem and self-depreciation. The individual's predisposition to react to external stimuli and the resultant coping behaviour are part of this study into affective states.
2. *Physiological states*. As there is a strong relationship between specific emotions and physiological measures, it is considered important by some researchers that major physiological indicators such as blood pressure, skin resistance, E.K.G. and adrenalin be measured.
3. *Disease entities*. Kahn and French suggest the use of criteria of some physical diseases such as rheumatoid arthritis, hypertension, and certain mental diseases, for example, the schizophrenias and the neuroses in so far as the latter are manifest in the non-institutional population. This will allow mental health researchers to take advantage of the work done by medical and psychiatric workers.
4. *Specific criteria of job performance*. These would include productivity, quality of work, rate of promotion, job satisfaction, absence and turnover.
5. *Adjustment and adjustability*. This is the degree to which a person is capable of dealing with the demands of his objective environment. It refers to the goodness of fit between the requirements of the person and the supplies which are available to him in the environment.

It is clear that the categories of Jahoda and French and Kahn are not mutually exclusive having large areas of overlap. It is important to note that in the case of French and Kahn's fourth category, high or low ratings on these job performance scales could be due to many external factors and not just to inherent mental health.

Kornhauser (1965) developed a component index as a measure of mental health, consisting of:

1. An index of manifest anxiety and emotional tension.
2. An index of self-esteem, favourable vs. negative self-feelings.
3. An index of hostility vs. trust in and acceptance of people.
4. An index of sociability and friendship vs. withdrawal.
5. An index of overall satisfaction with life.
6. An index of personal morale vs. anomie, social alienation, work alienation and despair.

From these criteria one can conclude that mental health is not a passive condition but a positive dynamic state of mind. That is, not just the absence of internal conflict and anxiety, etc., but a positive feeling for oneself, others and life in general. It is also apparent that the judgement of the state of mental health relies heavily on observation of an individual's behaviour. Since behaviour is usually the result of many internal and external factors it would be unwise to rely on behaviour as the sole criterion. The context within which the behaviour takes place must also be objectively considered.

Several authors have outlined and described approaches to be used in studying mental health in the industrial setting. Two such are The Menninger Foundation (1961) and French and Kahn (1962). Both emphasize the importance of different disciplines joining together in the study of mental health. French and Kahn narrow their attention to the effects of environmental factors on the mental health of the adult, with special consideration to social psychological factors in large scale organizations. They consider the industrial environment as both a source of pressure and conflict which interferes with mental health and as a support conducive to good mental health. Their approach takes into account the psychological environment (life space organization, role conflict, level in the organizational hierarchy), objective social environment (the industrial organization, role conflict) and the individual himself (needs and values, affective states, self-identity). Where the French and Kahn paper has a more theoretically oriented approach to the study of mental health, the Menninger paper tends to be a more practical how-to-do-it guide.

In the present review several major empirical studies will be considered along with a number of smaller studies. The review will consider only empirical studies and will not include studies which have been carried out in a laboratory setting as these are usually too artificial to be of value.

In late 1953 and early 1954 Kornhauser (1965) carried out a study on the mental health of industrial workers. He obtained usable interviews from 655 white, native born American males holding hourly paid jobs. Of these he used 407 Detroit auto workers, who had been with their company at least three years, on which to concentrate his analysis. They were grouped by age (20 — 29 and 40 — 49) and by occupational level (skilled, highly semiskilled, ordinary semiskilled and repetitive semiskilled).

The results were based on interviews carried out in the homes of the subjects in order that they would not be biased by the environment in which the questions were asked. Kornhauser used an index of mental health which was described earlier in this



paper. Kornhauser found that as one moved down the scale from skilled to repetitive semiskilled occupations, the mental health of the workers became poorer and that the relationship did not appear to be caused by differences of prejob background or personalities of the men who entered and remained in the several types of work. Kornhauser stated "the occupations we are comparing clearly present markedly dissimilar opportunities for satisfying self-actualizing".

This contrasts with the study by Argyris (1960) which showed no appreciable difference in the degree of self-actualization between low and highly skilled employees. Kornhauser feels that "job feelings are crucial intervening processes between the type of work men do and their level of mental health" and "expects job satisfaction to be associated with better mental health". When the level of job satisfaction was compared to occupational level Kornhauser found "large differences of job satisfaction do occur between categories of factory occupations". This difference also held for small town factories as well as Detroit non-factory workers who were also a part of the overall study. That is, the higher the skills used, the higher the job satisfaction and level of positive mental health found.

Kornhauser found that among young men, 56% of those rated above average in job satisfaction had high ratings on his mental health index (good mental health) as contrasted with only 13% of those workers rated as having below average satisfaction. He also found that job satisfaction and a high mental health rating are positively correlated at each separate occupational level. Kornhauser concluded that "a genuine relationship exists between job satisfaction and mental health among workers in separate job categories". He also found that in both the above and below average job satisfaction groups, the number of young workers at each occupational level scoring high on his mental health index decreased as one went from the skilled to the repetitive semiskilled level. The same trend was found for middle-aged workers except for those in the below average job satisfaction group at the ordinary semi-skilled occupational level.

One could question Kornhauser's use of such measures as sociability on the grounds that people may differ in their need for companionship without necessarily differing in level of mental health. The answers he expects on the Personal Morale scale to indicate mental health do not take into account the fact that at that low socio-economic level, answers he interprets as indicating poor personal morale may be just a true objective picture of the world of a Detroit factory worker in the early 1950's. That is, the people the factory worker meets may be out for themselves only, the officials he comes in contact with may not care about him as an individual, etc. In effect, Kornhauser does not know what his Personal Morale scale is measuring: objective or subjective impressions.

The Kornhauser index also fails to take into account how often a particular event occurs and whether there is a good reason for the particular event to occur. For example, under the anxiety scale he asks whether a person is ever bothered by nervousness. Not asking how often a person experiences nervousness and why he was nervous invalidates the question. A person may be nervous for a good reason and not because of poor mental health.

The net result is that Kornhauser builds up a scale which is internally consistent but may not reflect an accurate picture of the worker's mental health because his index is

biased toward middle class values. It is questionable whether Kornhauser is in fact measuring the relationship between various aspects of the work environment and mental health or just describing what life is like at that socio-economic level.

As many authors have pointed out, French and Kahn (1962) in particular, "Mental health tends to be culturally defined. To the more passive and resigned members of the lowest socio-economic bracket (who do not write textbooks), the posture of apathy may be realistic and self-maintaining"

In sharp contrast to the quantitative approach of Kornhauser is a study of a utility company in the mid-western United States by Levinson, Price, Munden, Mandl, and Solley (1966). The authors (psychiatrist, psychologists, and sociologists) adopted a clinical approach which involved unstructured interviews with the company's employees from top management to mobile line and digging crews. Although they interviewed 874 of the 2000 employees, only a few of these interviews were used as illustrations in the report of the study. The criterion they used to judge mental health was outlined earlier in this paper. They developed the concept of reciprocation, an unwritten contract between the employee and his employer which states that if the employee complies with the expectations of his employer then the employer will recognize his individual needs and unique identity. The authors see work experience in a company as "the process of fulfilling a contractual relationship in which both parties seek continuously to meet their respective needs".

They hypothesize that where reciprocation functions well, where the psychological contract is being fulfilled, behaviour will reflect a state of good mental health.

The researchers identified three central concerns of the employees:

1. interdependence with the company
2. the comfort of relationships with fellow employees, superiors and subordinates
3. the experience of change, both in personal life and in the company.

The main complaint with this study is that the reader cannot judge for himself whether the idea of reciprocation has been supported by the study or not. All the interviews used as illustrations in the report of the study support the authors' hypothesis. One wonders if there were interviews which did not. A further weakness is that there is little reference to the original criterion of mental health which they adopted. The study seemed to look primarily at job satisfaction without considering its correlation with the components of their criterion for mental health. In a few cases they did relate the effects of an unfulfilled psychological contract to one of their criteria. Does this constitute sufficient evidence of poor mental health? The authors do not explain clearly how the criteria are to be used or if a low rating on one or two of the elements of the criterion is enough to decide that the employee exhibits poor mental health. The study could have been quantified to some extent by grouping together employees who felt their contract with the company was being fulfilled, grouping those who did not have this feeling, and noting whether their behaviour differed. Their criterion of mental health could have been used to judge whether one group or the other manifested poor mental health.

The theme of looking for a correlation between job level and degree of mental health is quite a common one. Generally it involves an implicit assumption that mental

health is causally related to job satisfaction. The general result of such studies is that job satisfaction increases as one ascends the work skill hierarchy. Hoppock (1935) found that analysis of the satisfaction index in various occupational groups demonstrated that the more skilled the vocation, the more its members enjoyed their work. Harrell (1949) makes the statement that "morale studies despite many points of disagreement, have consistently reported that job satisfaction is a function of occupational calling and of the job". One of the consistent findings in studies done by the Organizational Behavior and Organizational Change Program of the Survey Research Center of the University of Michigan has been the strong positive relationship between the level of job grade, representing the skill requirements for the jobs, and the degree of intrinsic job satisfaction reported by the workers.

One such study was carried out by Morse (1953) with office workers as the subjects. Some 580 office workers were studied and their intrinsic job satisfaction was measured. Not only was job satisfaction significantly related to type of work, but the type of work proved the single most important determinant of liking or disliking the work itself. Grouping the employees into four classes, high level technical, semi-supervisory, varied clerical, and repetitious clerical, it was observed that only 7% of high level technical employees were in the low satisfaction group compared to 41% of the repetitive clerical group. The relation did not change when length of service and salary were kept constant.

Argyris (1960) attempted to study whether the mental health of highly skilled workers is better than that of low skilled workers. He hypothesized that since highly skilled employees tend to have greater opportunity to express more mature behaviour, for example to be creative on the job, or to use many abilities, or to be challenged by their work, they will tend to have a healthier work world.

The sample studied consisted of 34 highly skilled and 90 low skilled employees being paid on an incentive pay system. They were interviewed in the plant on company time. (A situation which Kornhauser believed might tend to give biased answers.) Interviews were held on different days of the week for a period of seven months. To confirm that the employees perceived the differences between the two groups (as did the researcher and management) the employee's own opinions of their work were noted. 94% of the highly skilled employees reported that they had jobs in which they experienced "plenty of variety". 83% of the highly skilled employees reported that they gained much personal satisfaction because they had challenging and creative work. 87% of the low skilled employees reported that they had jobs which were completely routine, dull, monotonous, with very little variety. 85% of the low skilled employees said that they obtained "no satisfaction from their work excepting good wages". This supports other studies which show the positive correlation between skill level and job satisfaction.

Argyris found that the highly skilled employees had a higher sense of self-worth and self-regard, expressed a greater need to be active, and a greater need to work with others than did low skilled employees. By the criteria of Kornhauser and some of the criteria listed by Jahoda, these workers would be considered mentally healthy. However Argyris lists some similarities between the high and low skilled workers from which he draws some important conclusions. These are:

1. desire to be left alone by management
2. to be non-involved, indifferent and apathetic about the formal goals of the organization
3. to experience skin-surface interpersonal relationships
4. to earn fair wages and to have secure jobs.

From the first two he concludes that the employees have withdrawn psychologically from the organization and thus they are in a state of apathy. He concludes from the third similarity that the employees are alienated.

The management of the firm believes, and the employees agree, that the firm is not pressure oriented. They have a long record of low absenteeism, low turnover, and low grievance rates, by the criterion proposed by French and Kahn (1962) a sign of good mental health. Each group felt that it was getting what it desired. This is the basis of Levinson et al's (1965) reciprocation criterion of good mental health. Argyris, however, is not sure whether this state of affairs is unhealthy or will lead to poor mental health in the long run.

Argyris unfortunately does not explicitly explain what criterion he applies but he obviously considers employee involvement in the running of the firm to be a very important indicator of mental health. This I believe is incorrect in that the attitudes common to the two levels of employees can be explained and accounted for differently. In order of appearance:

1. bad past experience with high pressure and tight control companies
2. the result of their suggestions not being taken seriously by management and thus they become non-involved
3. may simply not want to choose their friends from their work mates.

Thus in this study we see the degree to which the results of mental health surveys depend on the subjective evaluation of the researcher and which criteria he considers to be of overriding importance. Further support for my second explanation comes from a study of production workers in a heavy industry by the Survey Research Center (1950) in which they found that workers don't get involved in the organization because management didn't give credit for suggestions or that any suggestions they did offer were ignored. At this occupational level suggestions are usually the only vehicle by which the workers can get involved in the goals of the organization.

In a more direct study of skill level and mental health Kasl and French (1962), using self-esteem as the criterion of good mental health studied a mixture of blue collar, first line supervisory, second line supervisory and second line non-supervisory employees in two companies. Their basic hypothesis was that "self-esteem is negatively correlated with visits to the company dispensary". That is, mental health is negatively correlated with absences from the work place. A secondary hypothesis was "that supervisory responsibility is a source of occupational stress which will tend to increase the frequency of visits to the dispensary".

Two companies were selected for study. Company A subjects consisted of blue collar workers on 19 craft jobs, first line supervisors (foremen), second line supervisors

and second line non-supervisory employees. The 19 craft jobs were ordered according to the level of skill required to perform them. The Company B subjects were male non-supervisory employees in both white and blue collar jobs and their supervisors. These jobs were ordered into a status hierarchy by company officials.

The measure of mental and physical health used was the number of visits to the company dispensary over a 2 – 3 year period.

The authors found that in Company A skill level was inversely related to dispensary visits. Upon dividing the blue collar workers into high and low skill level groups, the latter had 73% more visits than the former. Upon ordering the foremen's jobs as to skill requirements the same inverse relationship held.

In Company B they found that men on low skill non-supervisory jobs had 129% more visits to the dispensary than men on highly skilled jobs. Low skill supervisors had 146% more visits than high skill supervisors.

Kasl and French consider these results as evidence in support of their primary hypothesis. They fail to show however, that their assumption that low skill employees have little self-esteem is valid. Self-esteem comes from a person judging himself in all activities and not just those connected with work. Kasl and French only tested 33 subjects to determine what their level of self-esteem was in the different groups. This is far too few to base their conclusions on. Therefore, they have not really presented sufficient information or results to confirm their hypothesis.

To investigate the second hypothesis that supervisory responsibility will lead to an increased frequency of dispensary visits, the authors compared the second level supervisors to the second level non-supervisory personnel in Company A and found that the former had 9% more visits than the latter. This comparison could be questioned on the grounds that there was no indication that variables such as age, job aspirations, and job mobility were taken into account. They found that foremen as a group had 43% more visits than all other craftsmen and 18% more visits than second level non-supervisory employees.

In Company B they claim that supervisory employees had 63% more visits than non-supervisory employees of equal status. However the graphs accompanying the paper show that the frequency of dispensary visits is less for all supervisory staff than for all non-supervisory staff. It is hard to account for such a discrepancy except to assume an error in drawing the graph for Company B.

A possible explanation for the higher rates of visits to the dispensary by lower skilled employees might be that they do not follow the medical officers' advice carefully and thus insure a repeat visit for the same ailment. There is no evidence that the authors screened out multiple visits for the same ailment and thus the number of new visits to the dispensary is not known. Kasl and French also found that there was a correlation of .59 between perceived monotony and dullness on one's job and the frequency of dispensary visits. Thus an even simpler explanation for the distribution of frequency is that visits to the dispensary provide legitimate excuses to break the monotony which is normally

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found in low skilled work. As for the foremen the visits could provide a break from the pressure on the floor.

In a study involving several industrial companies in the oil, automobile, electronic and machine parts industries, Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) attempted to determine amongst other things the association between conditions such as role conflict and role ambiguity, and several broad criteria of personal adjustment and effectiveness.

In each company they selected a number of "focal" offices from the table of organization. They attempted to obtain as much diversity as possible and therefore selected positions from staff and line, professional and administrative, office and factory. They then determined who were the people whose expectations had a relevant effect on the performance of the focal role. These people were called the role senders. They were determined through interviews with the incumbent of the focal office. The incumbent was also asked for an activity list, an assessment of the relationships of the focal person to each of his role senders and for an overall evaluation of his role in terms of conflict, ambiguity and tension. The authors then developed a conflict index by interviewing the 381 selected role senders to determine the magnitude and direction of pressures that the role senders were exerting upon their respective focal persons.

The focal person was then interviewed a second time to determine what he considered were a) his sources of satisfaction and dissatisfaction in his work; b) the extent to which he felt he had the ability, skills, knowledge, and personality to do his job well; c) his long range career history and aspirations; d) his sources of stress on the job; and e) his techniques for coping with stress.

The results showed that job-related tensions were higher where the degree of role conflict was higher. Not surprisingly they found that ambiguity was a significant source of stress for a substantial number of employees.

A study by Neel (1955) of hourly workers showed that there was a positive correlation between nervous stress in the workers and the workers not being fully informed about what is going on around them and where they stood with their foremen.

Kahn et al. (1964) found positive correlations between ambiguity and tension and feeling of futility, and negative correlations between ambiguity and job satisfaction and self confidence. They found that tension and strain increased monotonically as a function of status. They considered that this was due to the greater incidence of problems of conflict and ambiguity in high ranking positions. Role conflict was found to be more prevalent at middle management levels than at the top. The researchers looked at the effects of role conflict on focal persons they judged to be high in anxiety. The results showed that individuals rated high in neurotic anxiety whose positions were considered to be a high role conflict situation experienced greater conflict, more tension, lower job satisfaction, and higher feelings of futility than those judged to be lower in neurotic anxiety. Those who were considered low on both role conflict and anxiety proneness experienced little tension, less sense of futility, and enjoyed a high degree of satisfaction on the job. Those who were high on anxiety scales and were faced with little conflict, or were rated low on the anxiety scales and faced strong conflict situations reported moderate degrees of tension and satisfaction.

The authors pose the question (page 261) whether chronic environmental stress produces changes in personality along the dimension of neuroticism. Unfortunately, they do not pursue this question. With the data they had collected it would surely have been possible to determine whether there was a correlation between age or length of time in a stressful job situation and degree of neuroticism. This would not by itself prove anything but would have at least indicated whether this line of investigation might be worth pursuing.

This study is an example of the blending of the quantitative approach used by Kornhauser (1965) and the clinical observational approach of Levinson et al. (1966). It would have been better however if Kahn et al. had spent more time observing the role interactions. There is always the problem of knowing whether the person is telling the objective truth or the truth as he believes it is. Thus spending more than 5 or 6 hours with each focal person might have been very useful in confirming the validity of the interviews.

In an attempt to set up a cross-validation, the authors carried out a national survey. This survey involved 725 people employed in the twelve largest metropolitan areas of the United States and a sample from other counties, rural and urban. They compared the responses of the survey subjects to those of their 53 focal persons. They stated that they found that the responses from the national survey generally agreed with the responses in the intensive study but it was difficult to determine how they came to this conclusion. Again the problem of veracity of respondents arises, more so in the national survey since the respondents knew nobody would be checking the truth of their answers. The authors would not know whether the tension or conflict they were measuring was due to job related or home related conflict.

## SUMMARY AND CONCLUSIONS

Based on the studies reviewed in this paper the following comments can be made:

1. There is no single definition of positive mental health which is agreed upon by the many authors in the field. As a result, what one author considers as signs of poor mental health might be challenged or ignored by other authors who consider different criteria as being more important, and thus conclude that the individual is exhibiting good mental health.
2. It can be safely concluded that there is a strong positive correlation between level of job and the degree of job satisfaction reported by the worker.
3. It can be tentatively concluded that there is a significantly positive correlation between self-esteem (the criterion for good mental health in the opinion of some authors) and job satisfaction.
4. Stress and tension are higher where the job incumbent experiences job role conflict and ambiguity.

It is clear that a study of mental health in an industrial setting must be carefully thought out to take into account the many and various internal and external factors which influence a worker's behaviour. A methodological approach which might prove successful would involve a longitudinal study which combined both clinical and

quantitative methods. It will be important for the researchers to try to get an unbiased picture of the actual environment which is being experienced by the subjects at their socio-economic level. This would enable the researchers to determine the differences between the subject's actual environment and the subject's psychological subjective environment reported to them during interviews. This would then give the researchers a better measure of the subject's state of mental health. This actual view of the subject's work world might possibly be obtained by having a researcher or trained observer work with the subjects for a period of time before, during and after the study.

Until the researcher's biases in the evaluation of a subject's life style and those inherent in his quantitative methods are removed, the study of mental health in the industrial setting will continue to be a source of conflicting results.

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