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UNEMPLOYMENT AND METHODOLOGY AND THEORY FOR RESEARCH:  
INTERNATIONAL COMPARISONS

Report on a WHO Study Group

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EUR/HFA target 1

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## TARGET 1

### Equity in health

By the year 2000, the actual differences in health status between countries and between groups within countries should be reduced by at least 25%, by improving the level of health of disadvantaged nations and groups.

#### Index:

UNEMPLOYMENT

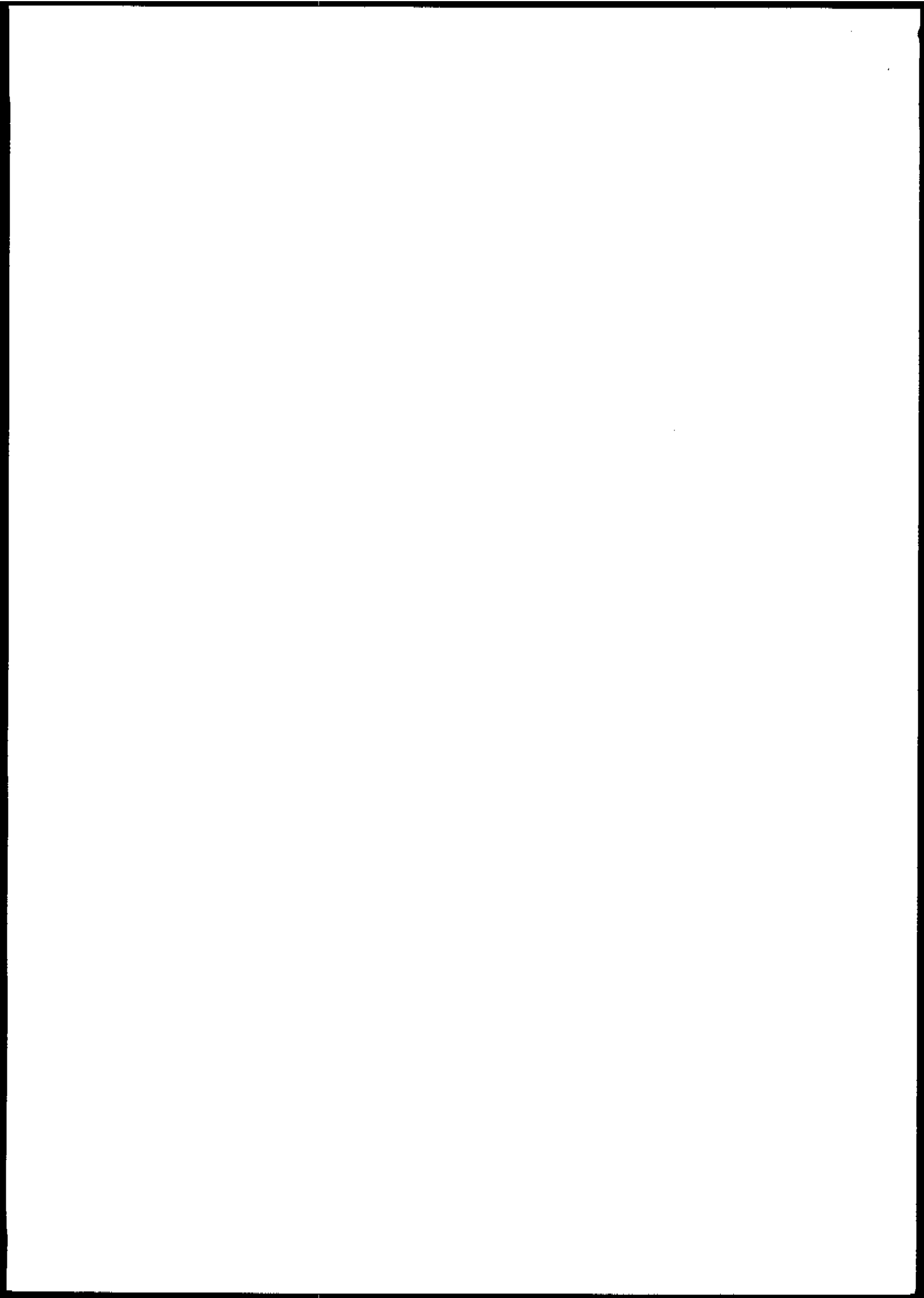
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SOCIOECONOMIC FACTORS

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## 1. Introduction

At the end of the WHO Regional Office for Europe's Study Group on Unemployment, Poverty and Quality of Working Life - Innovative Interventions to Counteract Damaging Health Effects, held in Vienna/Baden in May 1987, recommendations were made to establish three subgroups to study some specified themes in depth. These themes included unemployment and respectively:

- the clandestine economy;
- interventions;
- the methodology and theory for research.

The subgroup on unemployment research met for the first time in May 1988. Ten participants were invited, who in the recent past had carried out longitudinal research on the relationship between unemployment and health at the level of the individual. Participants came from six countries: Denmark, Finland, Netherlands, Norway, Sweden and the United Kingdom.

## 2. Scope and purpose

The scope and purpose of the meeting was to explore in depth:

### (a) comparability of results:

- which similarities may be discovered, indicating empirical convergences in health reactions;
- are there contradictory results, indicating empirical controversies;
- do we have recommendations on analytical strategies of research;
- are there important country characteristics that may explain differences in results;
- can trends or patterns in public health owing to unemployment be described;

### (b) what are the causes and effects in the relation between unemployment and health:

- can we identify operating mechanisms;
- can we identify high-risk groups;

### (c) can we construct concepts and/or theoretical frameworks, fit to derive strategies for interventions?

## 3. Proceedings of the meeting

### 3.1 Comparability of studies

Before the meeting, one particular study from each country was selected, which met the following criteria:

- individually based;
- longitudinal in character;
- referring to adult unemployed;

- referring to health effects of unemployment;
- preferably using a control group;
- description of results available in print.

The selected articles/reports are named in a separate appendix.

The studies were analysed as to their design, sample, measurement time points, and dependent and independent variables in a preparatory scheme designed to give a quick review of all the studies so that a clear view on their in-principle-comparability emerged.

In discussing the scheme during the meeting, the main conclusion was that comparability could be looked on at two levels:

- the level of results in general terms;
- the level of exact comparability of studies that use the same variables.

### 3.1.1 Empirical convergences in health reactions

At the first level, several participants (1,2) brought forward their ideas in respect of the general similarities in results.

The following overviews are based on papers by Brenner (1) and Verkleij (2). Brenner (1) concludes that recent reviews of the consequences of job loss and short-term and long-term unemployment reveal a consensus in some matters (3,4). First, it is agreed that the reactions to job loss and unemployment are complex, consisting of interactions of physiological, emotional, cognitive and behavioural reactions. Second, the reactions are modified by individual attitudes and resources, e.g. work involvement, coping behaviour, and availability and adequacy of social support. Third, the norms and values of the community, especially work ethics, and the rate of unemployment, i.e. the normality of being unemployed, also influence the type and strength of the reactions. Fourth, the economic conditions of unemployment modify the reactions. Fifth, the reactions differ in different phases of unemployment: strong stress reactions immediately before job loss, moderate stress over the first year of unemployment; in the later phase, some of the unemployed adjust to unemployment. The size of this group and the quality of the adaption vary with cultural and national conditions, especially the rate of unemployment and consequently the probability of getting a new job, work ethics and economic conditions. Those who do not adapt react with decreased health. There is even a small minority that shows an improvement in health. Sixth, interventions against unemployment must be strong and adequate to have a salient effect. Being re-employed is one such an "intervention" that has been demonstrated to have a positive effect on health and wellbeing (5).

Verkleij (2) concluded that the data of his longitudinal study in the Netherlands in many respects affirm the conclusions from other authors on the effects of long-term unemployment on health. This is the case with the following assertions:

- the long-term unemployed have more health complaints than the employed in all health dimensions (psychic, somatic and social);
- these differences are, indeed, partly the result of job loss and long-term unemployment;

- the causal effect of unemployment on health is most clearly visible in respect of psychic and psychosomatic complaints;
- the hypothesis that adverse health effects cumulate in a linear fashion is incorrect; instead, it is better to speak of chronic stress effects;
- in the first months after job loss up to half a year, there is some recovery in somatic complaints;
- ill health reduces the chances of getting a new job;
- re-employment leads to a pronounced improvement in all health dimensions (psychic, somatic and social).

Some of these assertions were under doubt at the beginning of the study in 1983 but were, during the course of the study, also affirmed in other longitudinal studies from other countries. This applies to recovery after re-employment (6-9), the temporary somatic recovery in the first months after job loss (6) and the fact that the linear cumulative stress model does not fit the data (10,11).

### 3.1.2 Contradictory results, indicating empirical controversies

Very few contradictory results among the studies were put forward during the meeting. In those instances where results of studies were contradictory, explanations were sought first in country differences or differences in study design.

### 3.1.3 Recommendations on analytical strategies

At the second level, it was concluded that one should start with selecting the dependent health variable that was most commonly used. This happened to be the general health questionnaire (GHQ). The GHQ is used in studies from Denmark, Finland, Sweden and the United Kingdom. In all four countries, it is used in the English or translated 12-item version with four response categories for each item. The studies differ, however, in the calculation method for the total GHQ score. It was therefore concluded that the comparability of the studies could be improved to a maximum if in all studies the total GHQ score were calculated according to the same method. A detailed proposal was put forward for reanalysing the basic data on the GHQ: It was decided that, in the next few months, a joint effort would be made to calculate all the basic measures in respect of the methodological characteristics of the GHQ in unemployed and employed samples according to an agreed calculating method, guaranteeing exact comparability. This effort should lead to a technical article on the results of the GHQ in employed and unemployed samples, to be published in an international journal.

An intensive discussion followed about the meaning of the GHQ in health terms: does it measure mental health, mental wellbeing, mental illness, psychological ill health, risks for minor psychiatric morbidity or something else. This question is important in estimating the magnitude of the health effects of unemployment, which in turn is important for the policy relevance of the results of the studies on unemployment and health.

The conclusion was that the GHQ is especially sensitive in registering changes in the medium range between health and illness and, as such, is

capable, at the epidemiological level, of serving as an early warning signal for detrimental mental processes. In this sense, high GHQ scores describe precursors of psychological ill health. This characteristic of the GHQ, i.e. that it does not measure mental illness *per se*, should not to be seen as a negative point. Instead, its sensitiveness in the medium range should be considered as very valuable for identifying detrimental mental processes as an effect of unemployment at a very early stage.

#### 3.1.4 Country characteristics that could explain differences in results

Countries in northern Europe differ in their rate of unemployment, which may explain some of the findings. Denmark, Netherlands and the United Kingdom have relatively high unemployment figures. Norway and Sweden have rather low figures. Finland has an in-between figure. In Denmark, 25% of the general working population and 40% of the unskilled working population become unemployed during one year.

Countries also differ in the transition possibilities from unemployment insurance schemes into disability pensions.

Countries differ, thirdly, in the proportion of women working, which can explain the differences in results between the Dutch and Finnish studies regarding the effects of unemployment on women. In Finland, unemployed women experience less negative effects than do unemployed men. In the Netherlands, differences in effects between the registered male and female unemployed are less sharp.

#### 3.1.5 Can trends or patterns in public health owing to unemployment be described?

This question has not been addressed intensively. The finding is important that not only unemployment itself but also the fear of unemployment has negative effects on health, which could be almost comparable in size for the individual but which could at an aggregate level be even greater in magnitude.

#### 3.2 What are the causes and effects in the relation between unemployment and health?

In all studies, precautions were made to prevent the drawing of too quick conclusions about a causal connection from unemployment to health. These precautions were:

- a longitudinal design, so that individuals could be used as their own controls, and control groups of re-employed emerge during the study;
- the use of control groups of the stable employed;
- a search for historical data about the health of the unemployed before discharge (via medical checks or retrospective questions), so that in the analysis corrections could be made for health selection effects;
- a detailed investigation of possible selection-bias resulting from different drop-out rates in follow-up studies owing to refusal to take part in the follow-up study, early retirement or disability pensions, etc.

These precautions are not only necessary in the case of the causal connection between unemployment and ill health but also in the case of the causal connection between fear of unemployment and ill health. In theory, ill health could be the cause of fear of job loss instead of the other way around.

However, even after all these precautions, detrimental effects on mental wellbeing could be demonstrated as a result of unemployment and fear of job loss.

At the physiological level, a pattern emerged in the Swedish study in which stress hormones such as cortisol, growth hormone and prolactin reacted during the acute phase of unemployment, i.e. year 1, while system metabolic and cardiovascular effects appeared or became permanent in year 2 (Brenner, p. 31).

### 3.2.1 Identification of operating mechanisms

By operating mechanisms, we clearly do not mean moderating variables but those processes by which the negative effect of unemployment on health is mediated. This could be psychological processes (the loss of self-esteem), by material processes (the loss of finances and the increase of payment troubles) or by social processes (the loss of social support). Identifying operating mechanisms is tightly bound to the building of theories on the basis of empirical data.

#### Age

Moderating variables may be used to identify operating mechanisms. The presentation of Paul Jackson on the role of age for unemployment reactions was a clear example. Age is an indicator of many things. It may represent cohort effects, biological effects, psychosocial effects and family demands.

By stratification of age and family composition, Jackson demonstrated that much of the age effect on the unemployment reaction, i.e. the GHQ score, reflects family composition effects. His conclusions were:

- for the young adult group (aged less than 20 years), unemployment delays transition into adulthood;
- for married men with dependent children, unemployment is most damaging because of high family demands, high work commitment (because of the role of bread-winner and the calvinist ethic), enforced dependency on the state that hurts, and a higher level of money worries despite income maintenance;
- for the oldest age group (aged 60-65 years), unemployment means preretirement and withdrawal from the labour market.

#### Social support

Results on the role of social support in unemployment reactions are growing. Some important analytical problems are facing us in this area, among others the conceptual uncertainty of the concept (Sabroe & Iversen). Different dimensions have to be distinguished:

- quantitative: number of relations and contact frequencies (network aspect);
- qualitative content: emotional, informative or material.

Loneliness may be seen as an indirect social support measure.

Next, there are various hypotheses about how an association between social support and morbidity can occur. Social support may act as an independent cause of morbidity, as a buffer that modifies strains and as an effect of morbidity.

In longitudinal analysis, it was found that the individual's quantitative network seemed to be of greater importance for his chances in respect of re-employment than the quality of the relations.

The evidence for a causal connection from unemployment towards loss of social support (combined index) appears to be less strong in longitudinal than in cross-sectional analysis, reaching nearly a point of nonsignificance.

In cross-sectional multivariate analysis, feelings of loneliness appear to be related to psychosomatic symptoms and low psychological wellbeing, independently from unemployment, while social support (combined index) only has a small, nonsignificant association with psychological symptoms.

To summarize: even in longitudinal analysis, some problems still exist in determining causal directions, because of confounding and selection bias and because of the multitude of causal connections; poor social support increases the risk of remaining unemployed, which again increases the risk of poor psychological wellbeing, which again may reduce the quality of social support.

#### Gender

The labour market situation of men and women differs within countries. Between countries, differences are greater among women than among men. More women than men work in so-called "female" occupations (service and clerical work), in part-time jobs, in less-paid and less-qualified jobs.

Most unemployment studies apply to male unemployment, a few studies to female unemployment (1,12-14), while a still smaller number have samples of men and women (14,15).

In the Netherlands, a specific characteristic exists in the large amount of hidden unemployment among women. The health of hidden unemployed women resembles the unemployed women in some respects and the health of the employed women in some other respects. The difference in health between Dutch unemployed and employed women is somewhat smaller than among males, but follows the same pattern.

In Finland, the health reactions after unemployment among female unemployed are less outspoken than among male unemployed. Finland has a great participation rate of women in the workforce. This may partly account for this finding. A rather large fraction of employed women in Finland may become free of a double workload after job loss.

### 3.2.2 Identification of high-risk groups

A distinction has to be made between a high risk for job loss and a high risk for negative health effects after job loss. Next, a distinction should be made between immediate effects after job loss and chronic effects. In the present case, we concentrate on the last aspect.

Identification of high-risk groups is related to the identification of operating mechanisms, but it puts much less emphasis on causal mechanisms. A high-risk group, i.e. a group of unemployed that has relatively bad health scores due or not due to the effects of job loss, may be identified without necessarily knowing the underlying causal processes.

There is a general agreement that the long-term unemployed as such is a high-risk group. Among the long-term unemployed, further divisions could be made in relation to psychological wellbeing. The following factors are influential (1): duration of unemployment itself, work involvement, work ethics, available social support, control, coping ability, the local unemployment rate and economic conditions of unemployment. The strength of each factor and the direction of the influence (positive or negative) is not yet clear in every case. Evidence has been put forward so that, with the present state of knowledge, the following high-risk groups may be identified:

- those aged between 20 and 60 years who have family responsibilities;
- those who have a high work commitment;
- those who have a low quality of social support or high feelings of loneliness;
- those who already in the beginning of unemployment have a relatively bad physical and psychological wellbeing.

### 3.3 Construction of concepts, theoretical frameworks and strategies for intervention

Theoretical frameworks are for the most part grounded in stress theories. Up to date, stress models clearly suggest an important modulating role for such variables as coping and locus of control, but no controlled intervention study has been launched to test the strength of these hypotheses under real-life chronic conditions. This biopsychosocial system model is likely to provide a better knowledge base for preventive programmes (Brenner).

A hypothesis tested in Swedish research among unemployed females says that good copers with internal locus of control, problem-oriented coping and good social support would have a significantly attenuated stress response, while the opposite would be seen among emotionally focused copers with external locus of control.

The explorative (or automatic) LISREL analysis yielded a picture that is consistent with stress theory. The stressful effect of being unemployed was increased by emotional coping or avoidance and buffered or decreased by direct or problem-oriented coping. The effect of social support was statistically eliminated by the effect of the coping dimensions.

The concept of coping was discussed at some length. According to different (e.g. Cummings (16)), reactions are promoted by the individual's

construction of the world instead of the world itself. Next, the individual makes a choice between two alternative ways of approaching events: events may be viewed as controllable or just as a chaotic process. This becomes a personality characteristic. To measure this concept of mastery, Pearlin's scale of mastery is better than Lazarus' scale. The division between feeling in control and feeling powerless has a kind of parallel in the division between emotional and problem-oriented coping.

If an event is not seen as potentially harmful, no stress reactions are expected. If an event is seen as harmful and demands more than normal coping methods, stress reactions will be more present in those people who feel that events are not controllable than in those people who feel that events are potentially controllable.

The way in which people construct the meaning of unemployment is shaped by a number of moderators: culture, gender, etc. Besides, the feeling of controllability is not just a personality trait but may depend on special events. The trait, however, has a "halo" effect over events in general.

#### 3.4 Strategies for intervention

In the Swedish study, part of the unemployed group participated in a structured intervention. The programme focused on the formation of political self-help groups and a social self-help programme. The participants created small groups that engaged in finding new job opportunities, developing new skills and in general providing mutual social support. The goal was to instil a real feeling of being able to influence one's future (1). In the intervention programme, the unemployed were given access to different kinds of activity (work-related, physical training, educational, hobby and social activities). The unemployed were free to take part in one or more of the activities. The results were disappointing, however (Brenner). So interventions against unemployment must be strong and adequate to have a salient effect. Being re-employed is one such an "intervention" that has been demonstrated to have a positive effect on health and wellbeing (Brenner, p. 6).

Subgroups among the unemployed, which are at a higher risk of getting long-lasting depressive reactions during long-term unemployment, may be identified early during unemployment. Individual or group interventions aimed at counteracting negative effects of unemployment should be concentrated on these subgroups.

Still to be discussed is the question how to make a mix of efforts aimed at re-employment for all the unemployed and specific interventions aimed at the above-mentioned high-risk groups.

#### 3.5 Methodological problems in analysis of change

It was emphasized that, in analysing changes, a conditional model should be used, i.e. a model that takes the initial score into account. There are two variants: prediction of the T2 score, taking the T1 score into account or predicting the change (dT) score, taking the T1 score into account. These two variants are methodologically equivalent (17).

A discussion took place about the use of logistic regression. Logistic regression has advantages in the presentation of results, because of the possibility of using risk ratios that are more easily understood and more

convincing than correlation analysis. Further, it does not assume a normal distribution of scores as MANOVA does.

However, there are some problems. The dichotomizing of the scores has some arbitrariness, even if one looks at the distribution of the scores. Second, dichotomizing complies with the medical model by dividing people in a "normal" and an "ill" group. Third, it gives problems in analysing changes, because of the regression-to-the-mean effect if one does not take the T1 score into account.

Also, some LISREL models were discussed (1,5). Sabroe's LISREL model about the longitudinal relation between unemployment, psychological wellbeing and social support showed that unemployment influenced psychological wellbeing and that psychological wellbeing, in turn, influenced social support. The last effect is contrary to the buffer hypothesis, which says that high social support lessens the detrimental effects of unemployment on health. The LISREL model of Brenner has already been discussed earlier in this report.

Methodologically, LISREL is a powerful analytical technique. It has to be understood quite well; otherwise one may draw wrong conclusions. LISREL is well suited to analyse data on change. It involves some difficulties in analysing interaction effects, although it is possible to study the same substantial model in different subgroups.

#### 4. Agreements

At the end of the meeting, it was concluded that it was a success in respect to its purpose. A number of agreements were made for joint efforts in the future.

First, a WHO-supported European study group on unemployment research has been set up. The objectives of the group are the scientific study of the relations between unemployment and health at the individual level, i.e. discovering relations between trends and patterns in health and unemployment and studying the health consequences of unemployment and being unemployed. A specific goal is international comparison and publication of results.

The study group meets every one to two years. Chairmanship circulates and is decided at the regular meeting of the group. The Chairman until the next meeting is Dr I.P. Spruit. The secretariat is placed at the Institute of Social Medicine of Leiden University. The next meeting will be held in Copenhagen from 28 to 29 September 1989.

Second, the group will, within about a year, prepare a methodological paper, to be offered to an international journal, on the GHQ scores in unemployment samples in four different countries. The paper will concentrate on the comparability of the GHQ scores. To optimize comparability, attention will be given to comparable coding and calculation of scores and to the methodological properties such as the reliability of the GHQ. Jackson will be coordinator and first author. Participants and co-authors are Spruit (introduction about the meaning of the GHQ), Brenner, Iversen, Sabroe and Lahelma (GHQ data). Jackson will prepare a detailed scheme of the necessary data and send it to the co-authors.

Third, apart from the GHQ article, the group will prepare, within another year, a substantial and integrated paper, to be offered to *Social science and medicine*, on the individual health consequences of unemployment in Denmark, Finland, Netherlands, Norway, Sweden and the United Kingdom. The paper should contain a cross-national comparison, stating areas of agreement and areas of explainable differences in results. After a general introduction, each country gets one paragraph in which, along the same line, study designs and results will be mentioned. First authors are Spruit and Jackson. Spruit will prepare a general structure for the paper and a time schedule.

#### REFERENCES

1. Brenner, S.O. et al. *Individual effects of job loss and unemployment*. Stockholm, Karolinska Institute, 1988.
2. Verkleij, H. *Long-term unemployment and health, a comparison between some longitudinal studies*. Leiden, Institute of Social Medicine, 1988.
3. Warr, P. et al. *Unemployment and mental health: some British studies*. Sheffield, MRC/ESRC Social and Applied Psychology Unit, 1987.
4. Cullen, J. et al. *Health effects of work and exclusion from work; approaches to understanding, monitoring and interventions*. Paper presented at the WHO Meeting on Unemployment, Poverty and Quality of Working Life - Innovative Interventions to Counteract Damaging Health Effects, Vienna, 1987.
5. Sabroe, S. & Iversen, L. *Unemployment, social support, psychological well-being and psychosomatic symptoms*. Aarhus, Institute of Social Medicine, 1988.
6. Brinkmann, Chr. *Psychosoziale und gesundheitliche Folgen der Arbeitslosigkeit - Ergebnisse einer repräsentativen Längsschnittuntersuchung des IAB*. In: Kieselbach, Th. & Wacker, A., ed. *Individuelle und gesellschaftliche Kosten der Massenarbeitslosigkeit*. Beltz, Weinheim u. Basel, 1985.
7. Iversen, L. & Sabroe, S. *Participation in a follow-up study of health among unemployed and employed people after a company closedown: drop-outs and selection-bias*. Copenhagen, Institute of Social Medicine, 1987.
8. Iversen, L. & Sabroe, S. *Psychological well-being among unemployed and employed people after a company closedown. A longitudinal study*. Copenhagen, Institute of Social Medicine, 1987.
9. Lahelma, E. & Kangas, R. *Loss of paid work - loss of psychic well-being. Efforts to specify the relationship between unemployment and health in Finland*. Helsinki, Rehabilitation Foundation, 1987 (Working Paper, No. 1/1987).
10. Brenner, S.O. & Levi, L. *Long-term unemployment among women in Sweden*. *Social science and medicine*, 25: 153-161 (1987).

11. Warr, P. & Jackson, P. Adapting to the unemployed role: a longitudinal investigation. *Social science and medicine*, 25: 1219-1224 (1988).
12. Westin, S. et al. Medical consequences of a factory closure: illness and disability in a four-year follow-up study. *International journal of epidemiology*, 17: 153-161 (1988).
13. Westin, S. et al. *Unemployment, disability and death consequent to a factory closure: a ten-year follow-up study*. Trondheim, Department of Community Medicine and General Practice, 1988.
14. Klein-Hesselink, J. *Unemployment and health among unemployed and employed men and women*. Leiden, Institute of Social Medicine, 1988.
15. Lahelma, E. & Kangas, R. *Unemployment, re-employment, and psychic well-being in Finland*. Helsinki, Rehabilitation Foundation (prepared for publication in *Unemployment, poverty and quality of working life*, West-Berling, Edition Sigma, 1988).
16. Cummings, T.G. & Cooper, C.L. A cybernetic framework for studying occupational stress. *Human relations*, 32: 395-418 (1979).
17. Plewis, I. *Analysing change - measurements and explanation using longitudinal data*. Chicester, John Wiley & Sons, 1985.

Annex 1

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