GEMS

of the Health Promotion Research Programme

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HEALTH PROMOTION RESEARCH PROGRAMME TERVE

Research programmes are composed of a number of closely related projects working in the same field of research. Programmes are set up in important an area of research that are advancing rapidly as well as in nationally or internationally significant fields where there is a need for new scientific evidence. Their aim is to raise the overall standard of research, to promote interdisciplinarity and internationalisation, to establish and strengthen the knowledge base within the field concerned, to promote research careers and networking among researchers and to intensify researcher training.

Research programmes are dedicated to special themes or problems. They are coordinated by programme directors and programme coordinators hired with Academy funding. Research programmes run for a fixed period of time: usually funding from the Academy is provided for a term of three years. Other domestic and international funding bodies often contribute as well.

The Research Council for Health of the Academy arranged an open workshop in 1999 on future preventive health policies. Based on this and other related workshops, the Health Promotion Research Programme was launched in 2000.

The Academy of Finland launched Health Promotion Research Programme for the years 2001 through 2004. Further support for the Programme is given by the Finnish Work Environment Fund, The Ministry of Transport and Communications and the Finnish Cancer Foundation.

This book summarises most important Results of the Health Promotion Research Programme that are available at the moment. Many projects continue and produce more interesting results.

Matti Rautalahti	Virve Laivisto
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PERTTI HAAPALA

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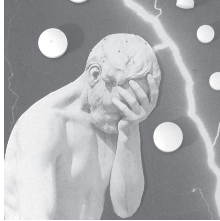

PART I

HEALTH PROMOTION POLICY

VALUES, NORMS AND HEALTH PROMOTION CULTURES

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Pirjo Lääperi and Ilkka Pietilä

Discourses of health promotion

Lay epidemiology is a term used to refer to the process by which people compare the health information and concepts available to them through the media, health care personnel and health education materials to their own observations, thereby forming their conceptions of the reasons for health and sickness. The process is flexible and continuous; new research findings or observations of the immediate environment challenge and shape these conceptions. What is essential is that the process is based on interaction with other people, either in direct discussion or indirectly via the media.

People's knowledge, values and beliefs regarding health constitute a part of health culture, which also includes behaviour and the products of that culture. These include written, visual and audio mass media products. In Finland people's health behaviour and related factors have been monitored ever since the end of the 1970s. Much less attention has been paid to researching discourses and people's conceptions, opinions and beliefs. Alongside lay epidemiology the study of the symbolic side of health culture, namely the image of health conveyed by cultural products is an emerging field. (Cf. King & Watson 2005) Formerly media research relating to health, both in Finland and internationally, was largely the study of the effects of health communication: how the messages disseminated by the media and various health campaigns change people's behaviour, attitudes and knowledge.

It is an integral part of a democratic society to take the people's perspective into account in all decision-making, including decision-making on health-related issues. Shared values, norms, conceptions and beliefs are important not only in defining health policy, but also in evaluating practical health promotion measures.

Cultural fields and discourses

This text describes cultures of health promotion and prevailing discourses by condensing the research findings obtained on the project entitled "Values, norms and health promotion cultures". Health promotion is moreover considered from the perspectives of, the media and the public, using for the purpose the conceptual framework presented in Figure 1.

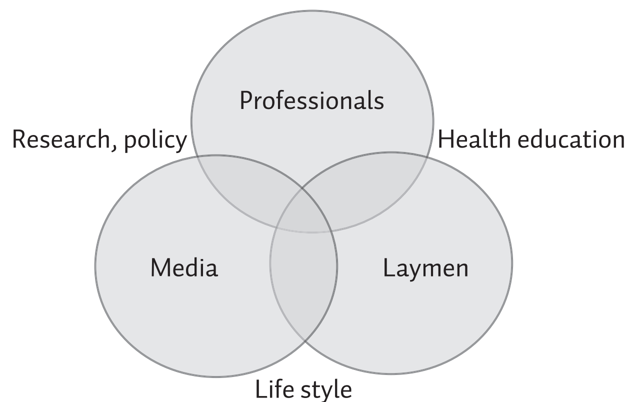

***Figure 1**. Cultural fields of health promotion.*

We comprehend culture as an entity comprising various discourses. They use languages or modes of communication, which covers not only verbal communication but also other forms of communication such as visual language, style and at it's widest even the entire way of life. Each culture has its own rhetoric and way of exchanging meanings by using language, which reflects existing values, norms and modes of thought.

However, language as a mode of speech and using various concepts does not only represent but also creates social reality. (Lotman 1990.)

In the field of health, as in other arenas of life, there are different cultures where themes, content, discourses and style differ from one another. Such cultural fields of health promotion for example are the discursive practises of a professional community, people's health culture(s) and the health publicity disseminated by the media.

In such fields discourses of health will include the values shared by all three and also those peculiar to the respective divisions. The project applied the semiotic concept of culture as a system of discourses. Each cultural field evolves its own language and defines its own boundaries in relation to others. Sometimes the boundaries are very clear. Yet they are constantly subject to change. Cultures may exclude something old and include something new, borrow from other cultures and expand into strange arenas. This shifting of boundaries may create new thinking, a new culture and new values. (Lotman 1990.)

Value is one sub factor of culture. It is something on whose goodness and worth the community has agreed, formally or otherwise. The values manifest in the discourses of professionals, media and the public combine individual experiences and the parlance adopted by the community. Values are what hold society and culture together and are very slow to change. Health, in addition to happy human relations and adequate subsistence is one of the human being's basic values. (von Wright 1963, Puohiniemi 2002.)

We now summarise the findings of a project in which the rhetoric of the editorials of daily papers, discourses of the news and advertisements on health promotion were examined and the opinions of members of the public on factors influencing health were ascertained by survey and qualitative interviews. The objective was to advance understanding of the prevailing health promotion culture in Finland. The research group included Kirsi Lumme-Sandt, Marja Pakarinen, Matti Pasanen, Pirjo Lääperi and Ilkka Pietilä, who is the author of the section "Exercise, man, performance" in this paper.

Health and economy on the editorial pages

The newspapers and the media in general are a polyphonic space in which various actors endeavour to make their voices heard. There is no single public view as to how health should be promoted and protected; there are many. However, some issues receive more and more positive publicity than others, and thus form the dominant culture of publicity.

We selected the media material for our corpus from the editorials and news pages of the two main Finnish quality dailies *Helsingin Sanomat* and *Aamulehti* for the period 2002 – 2004. The image of health promotion reflected in the editorials (N=29) was very much dominated by *an economic vocabulary*. Economic arguments for health promotion were more prominent than appeals to people's well-being. The editorials also cultivated vocabulary other than that of economy. The *war metaphor* was used especially in writing about drugs and alcohol, by mentioning, among other things, the war on drugs and the alcohol front. *Journey* as a metaphor for the right sort of activity was associated particularly with writing on diet. Questions were posed such as whether our choice of food is "on the right track", and it was proposed that the menu might "take a turn in a slightly more homeward direction". (Aarva & Lääperi 2005.)

It is interesting that the battle and journey metaphors are much used, for example, when discussing science, but also to describe a human life, birth, growth and death and also the setbacks in life. (Cf. Hellsten 2003.)

Two important action areas of health promotion are creating supportive environments and strengthening communities (WHO Ottawa Charter 1986). In environmental issues the traditional nature conservation discourse was prevalent. The aspect of the social environment that received the most attention was the workplace environment. No reference was made at all to the question of how inspiring and healthy for example home environments were. *The predominance of work-related values* was also clearly seen in the fact that the theme of communities was raised only in texts dealing with well-being in the workplace.

The model story of health promotion

The most popular news themes on health promotion in our data (147 items of news) were physical and social environment, welfare services, nutrition, overweight, drugs, human relations and exercise. In addition to a thematic examination we constructed a model story of health promotion, a kind of core narrative on the basis of the news material. We scrutinised how the papers described actors in health promotion, who they were and what their roles were. For this we applied on the basis of the structures of Russian folktales (Propp1994) the narrative actantial structure developed by the semiotician A. J. Greimas (1990). In the journalistic texts we sought the actants of the story (actors and actions) and created an actantial model of health promotion (AMPH). Our initial assumption was that the core value of health promotion, i.e. the object pursued, is naturally *health*.

Thus in the stories on health promotion as in the fairytales there are heroes, villains, helpers, threats and obstacles. The most interesting, and from the perspective of practical action, the most challenging actant in the story is *obstacle*. Obstacle actants represent the (opposite) side of health promotion, which either causes threats and problems or impedes action to remove these. In the news material this group included first people devoid of the ability, inclination, will or motivation for a health-oriented life, second undefined obstacles to health such as rationally uncontrolled living and third cultural factors, values and beliefs opposed to being health oriented.

An actant positioned as an obstacle tells of the forgotten, unknown, uncontrolled and concealed side of health promotion. It describes "otherness" in relation to the mainstream culture and draws a line between good heroes and bad villains.

In the model story *the Good Guys are health experts*: decision makers, researchers and health professionals and the bad guys are the problems, the people bearing them and the visible or invisible reasons for those problems. The B*ad Guys* include *overweight people, non-achievers, passive*

people and *smokers*, especially those who are unwilling or unable to change. Other bad things are *alcohol* in general, the *tobacco industry* and the *confectionary industry*. The position of the public in the story is neutral. (Aarva & Pakarinen 2005.)

The union of beauty and health in advertisements

The semiotic analysis, which we also conducted in the advertisement research, showed that health and well-being sell; advertisements expressing these or using them in argumentation seek to link health to beauty and activity. Although health is one of the most important values for people, it does not alone appear to be a sufficiently potent sales argument. In advertising health and beauty constitute a mutually beneficial union. In the argumentation health appears to need support from image of feeling good, light, looking good and enjoyment. For example, advertisements for cosmetics and foodstuffs may invoke additional arguments through images connected to health. The advertisements examined suggest that in our culture today health and feeling good can be achieved in many ways, but the greatest of these are *activity and visible action*. (Lumme-Sandt & Aarva 2005.)

In health publicity health advertisements represent the side of well-being which people do not evaluate rationally, reasoning and measuring. Advertising – like various health fashions – often appeals to the irrational side of people, their yearning and dreams. Advertising related to health may be effective just because people do not consciously consider it important and therefore do not necessarily resist it. However, in the interviews conducted with adults (N=1026) by Tarkiainen et al. (2005) it turned out that two out of three interviewees considered that advertising related to health and health products was an important source of information for people.

The conceptions of the public

As part of the project a telephone survey was conducted (N = 782 in 1994 and N = 882 in 2002) to examine, how the adult Finns prioritise

health threats and causes for illness. Both open-ended and structured questions were used. Two interesting aspects emerge from the findings: First, in people's opinions the significance of health behaviour, in particular the lack of physical exercise as a cause of illness was increased, while the importance of societal factors, such as unemployment and environmental pollution diminished during the research period. Second, when structured questions were used, *smoking* and *excessive alcohol consumption* were chosen as the most important risk factor, whereas in the responses in respondents' own words the most important risk factors were *wrong diet* and *low level of exercise*. (Aarva & Pasanen 2005.)

Other studies (Helakorpi 2002, Pan European Survey 1999) have also reported the rise of exercise and diet as important factors related to health. The discrepancy between the structured responses and those in respondents' own words raise the question whether smoking and excessive alcohol consumption have over the years become too obvious health hazards to be considered when responding spontaneously. Diet and exercise moreover invoke numerous positive images, while smoking in particular is unambiguously solely detrimental to health.

The main messages of health education with the stress on living habits have been widely accepted by both the population and the media. People's conceptions appear to be largely linked to the public image of health. This is further supported by the findings of Tarkiainen et al. (2005), according to which the majority of the interviewees reported that the health information obtainable from the mass media gave the right picture and around one third had sought information from the media specifically on diet and exercise.

Perceiving *hectic pace of living* as a health hazard appears to have become more widespread with the arrival of the new millennium. Likewise more and more Finns, especially women, consider *meditation and a quieter life conducive to health*. Here again the findings of Tarkiainen et al. (2005) also point in the same direction, suggesting that the adults interviewed consider mental well-being and equilibrium to be one of the most important matters in the concept of health.

Exercise, man, performance

Population survey was taken further with a qualitative study of men's conceptions of health in which the data comprised 6 group discussions and 14 individual interviews. The interviews were carried out in three paper mills in Tampere Region during the period 2003–2004. In these interviews, as in the telephone interviews, exercise and diet, with the men elaborating notably and in many different ways on exercise, were greatly stressed. Descriptions of smoking, on the other hand, evinced only slight variation. The main content of the descriptions can be condensed into the sentence "Yes, everybody knows that smoking is dangerous, but it's just so difficult to stop it." This generally accepted interpretation demands no wider consideration of smoking nor in the individual's own life. Thus tobacco dependency therefore serves as something which rhetorically legitimises continuing to smoke. (Pietilä 2005a.)

Exercise appears to have a great deal of significance in the men's conception of health. Exercise and fitness tests were evoked as justifications in evaluations of men's own health, and the men's health talk was characterised throughout by the interpretation of health as physical capacity. *Activity pertaining to exercise, achievement and quantifiability of results* would appear to go well with our culture's ideals of masculinity. (Pietilä 2005b.)

The discussion on the information disseminated on health was wide-ranging. There were numerous different expressions with a moral tone as to how a person should obey instructions on living habits and references to assumed sanctions of activity against the norms. There was no criticism of health information or its ample quantity. On the other hand, the means of disseminating such information and the reliability of such information was criticised and doubted. (Pietilä 2005b.)

Conclusions

Those ways to promote health which are widely approved of the professional field, the media and the public are *exercise* and *eating lightly*. They are today at the heart of the Finnish health promotion culture

and, with the notion of *being active*, together represent the dominant discourses of health promotion.

The common zone (Figure 1) of the professional field and the media consists particularly of research and policy. It is important for the professional field to attain visibility to support decision-making and measures, and the core role of the media is in disseminating information on plans, decisions, research findings and actions. The discourse in the editorials suggests that the common values are *the pursuit of economy and efficiency* and also *an emphasis on working life*. These are also clearly manifest in the strategy for Finnish social and health policy of the present decade. (Strategies for social protection 2010, 2001) This is in keeping with the currently dominant atmosphere according to which economic growth, consumption, efficiency and investments dictate the development in society.

Life style matters are the most typical common zone of the media and the public. Matters conducive to *nutrition* and *exercise*, but to an increasing extent also to *mental well-being* and *unhurried lifestyle* are prominent in people's interpretations, but to some extent also in the media. The analysis of the news showed that it was social and physical environment and welfare services which became the papers' most popular health promotion news stories. It may be that there is more news on these nowadays than on conventional health education themes, exercise, nutrition, smoking and alcohol consumption, with nutrition by far the most popular.

Health education in its various forms links the public and the professionals in a communication situation. *Nutrition education* and *education for health-enhancing physical activity* are today's dominant themes. At the same time as our health policy has stressed the importance of health-enhancing physical activity (Decision-in-Principle of the Council of State 2002) there has been an increase in the significance of physical activity in people's opinions and in leisure-time exercise (Helakorpi et al. 2003). Media publicity has supported this trend, likewise the trend for lighter eating. In the long term Finns' eating habits have changed in the direction recommended. With regard to physical activity and nutrition public opinion in Finland, media

publicity and behavioural changes are consistent with the objectives of the Finnish health promotion policy.

Despite positive developments, however, there has been an increase in the proportion of overweight people in the last ten years. Alcohol consumption has increased, and there had been no decrease in the number of smokers. Moreover, the differences in living habits between social groups have remained the same. (Helakorpi et al. 2003) People's views do indeed describe *the prevailing ideals of health, but these do not extend to the actions in the routine lives of all groups in the population.*

If we examine the state of health of the nation using perceived health as a measure, in 2003 approximately one tenth of adult Finns were in fairly poor or poor health. The same proportion reported that in the previous month they had felt worn out all the time or at least quite a lot of the time. Every fifth reported feeling tired. (Helakorpi 2003). The values of "being active" and "doing a lot" have a negative side when becoming a compulsion at work or in leisure time. Our own findings (Tarkiainen et al. 2005, Aarva & Pasanen 2005) suggest that alongside the means of promoting bodily health – physical activity and healthy eating – *people are beginning to entertain lifestyle values emphasising mental well-being, equilibrium and peace and quiet.*

Recommendations

It is well known that health problems accumulate among the disadvantaged. Since information dissemination targeted at the entire population and other health promotion measures do not appear to be sufficient to help those in the weakest positions, there should be more precisely focused support available. Investigative youth work supports young people in problem situations and professional social work at its best seeks out and identifies those unable to help themselves. In health promotion it is important to modify the course – at least with reference to exercise and nutrition so as to take more appropriate note of *the otherness of the story of health promotion: what is forgotten, concealed, wrong and out of control.* The bad guys, villains, need to be brought into the fold

and supported to the good, the heroes are taken care of by market forces and are well able to take care of themselves in our modern routine, shot through with competitiveness.

While our culture nowadays emphasises being active, it might be useful from the point of view of health and well-being *to take more note of the benefits accruing to a person through idleness, communion with the inner self, quietness and spirituality.*

The change in perspective could be tested on practical health promotion programmes utilising the actantial model of health promotion. This would enable not only the production of the core narrative but also many other stories to describe the value dimensions of activities. The model is also applicable for the assessment of other communications than journalistic texts. As a theoretical framework AMPH is flexible, so some other subject than health, for example losing weight or stopping smoking could be selected as the point of departure for analysis. Other potential core value could be freedom, peace of mind, safety or enjoyment. The change in perspective would then change the nature of the entire field examined. And the Bad Guy might even become a Good Guy.

In the long term new priorities will oust nutrition and exercise from their present dominance of our health promotion culture. What those new priorities may be remains to be seen.

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HEALTH PROMOTION AS IDEOLOGY, POLICY AND PRACTISE IN THE 20TH CENTURY FINLAND

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An overall view

The aim of the research was to study the making of the Finnish health promotion policy as a social and historical practice. From such a perspective health becomes a social and cultural phenomenon as well as a biological one. Health promotion consists of medical knowledge, values and dispositions, as well as institutions and practices, which are realized as health policies. That proved to be the case. It would be simply false to explain health policy without taking the social environment (including resources) seriously, if not even as the starting point of the analysis. The history of health policy had its own logic and discourse, which can be read in the written history of medicine and the profession. These studies have, however, lost the sight of how deeply "the society" with its non-medical interests determined the limits and perspectives of health promotion – and will do so in the future as well.

The development of Finnish health policy can be divided into six periods. Firstly, a new scholarship, *hygiene* was established in medicine and the ideas of preventive medicine, sanitary reforms and personal hygiene were spread to everyday life in order to avoid infectious diseases in the late 19th century and early 20th century. *Eugenics* – in Finnish rotuhygienia – was a part of hygiene, which focused on the threat posed

by degenerated individuals in the 1920s and 1930s. In the post-war period *population policy* paid attention to children's and mothers' health. Preventing chronic diseases by guaranteeing a sufficient supply of health services and by removing financial barriers to using services became the main goal of *health service policy* in the 1960s. In the late 1960s and early 1970s the structural development of the society was argued to be crucial and health policy was defined to be a part of *social development policy*. Analysis of the newest phase called the *policy of individual freedom and responsibility*, which started in the 1980s was left outside the scope of this study.

In the hygiene project the target of health policy was the lower classes, and eugenics paid special attention to the problems of urbanizing society. After the World War II, the new term for public health, *kansanterveys*, literally meaning people's health, suggested as its scope the whole nation. However, the focus was particularly in the care for mothers and children in the countryside. During the 1960s the needs of rural adult population were given priority, and health was combined with the idea of better "national performance". In the critical debates of the 1970s the unfavourable health effects of economic growth and urban lifestyle were discussed, and the noticing of social health differences brought specific risk groups into the focus of health policy.

In Finland the concern for health has been continually defined as a responsibility of the society. Thus the new debate on reducing the role of the state on health policy can be seen as a major turning point. Considering the role of individuals, during the early 20th century individuals were seen as passive receivers of the reforms and health education. The health service policy of the early 1960s was distinctively system-orientated: people's lifestyles and living conditions became invisible and people were perceived as mere users of the services. During the late 1960s and 1970s the emphasis on socio-economic structures contributed to a recognition of the importance of living conditions to health. Subsequently, promoting healthy lifestyles and underlining the ideas of individual freedom and responsibility for one's health became key concepts especially after the severe economic crisis of the 1990s.

Since 1960s, national and communal arguments became more and more rare, while individualistic arguments have become dominate in health policy. Economic arguments, varying in style, have lasted over the whole century reflecting the ways of understanding the national economy and its imperatives.

The study shows that the views on health, health risks, as well as measures and conditions to maintain and achieve good health have been constantly changing and the changes have been mostly unpredicted. Judged from each new point of view the achievements of the health policy of previous periods have seemed to be inadequate. The most remarkable turning point took place during the 1960s, as the focus changed from acute to chronic illness, from mothers and children to adult men, from hospital-based system to primary and preventive health care and finally to the structural development of society. What was exceptional for the 1960s was the intensity of the debate, which can be explained by the simultaneous rapid changes in the epidemiology, demography, mobility and the whole society. Since that the scale of the field (health policy and resources) increased dramatically, which seem to prove that there is no limit for health promotion – except the resources which always "lag behind".

Detailed studies

The empirical object of the study was the prevention of the most common diseases ("kansantaudit"; "national diseases"), i.e. the major health programs in the 20th century Finland. These programmes produced a number of positive rules and advice in order to protect the nation from severe health problems. As explained above health promotion activities derived from different social backgrounds, values and practical interests. Medical health ideology, that is the "scientific argumentation", cannot be seen as a strong explaining factor for the development of health policy though it was always used as an argument. The official health policy discourse in the 20th century was determined more by "social analysis" though often written by medical doctors. The role of medical science was in that respect a minor disappointment for the researchers.

The study of the medical practices and understanding before the "bacteriological revolution" prove how little the patterns of thinking actually changed before the WWII and how decisive the resources of medical care – and social changes – were for the improvement of public health. On the other hand the public discourse (understanding and meaning) of health changed much more radically than the actual situation.

The "long 20th century" of heath promotion began already in the late 19th century. The Finnish health policy was articulated for the first time as early as in the years 1857–1865. Frans Rabbe, a long time senior accountant of the National Board of Health, published his ideas concerning the measures needed for the promotion of health of Finnish people in 1858. The Medical Police Committee was appointed in the year 1862, and a general plan of the public health measures needed in the country was entered in the minutes of its second meeting. Also in the first general meeting of Finnish physicians the public health measures for promotion of health of Finnish people were discussed in the year 1866. The first legislation concerning the chemical risks in the workplace was promulgated in the year 1865: a statute concerning the manufacture and selling of phosphorous matches. Several of the lines of action of modern occupational safety and health were already formulated in the process leading to this statute, e.g. inspection before the premises for the manufacturing are officially accepted, separate working clothes, public display of the statutes in the workplace, monitoring the health of the workers.

The Spanish Fever in 1918–1920 was a major health catastrophe also in Finland but was practically ignored due to the Civil War and its effects in 1918. A detailed analysis of the pandemic showed clearly the shortages of the health care system of the time, the lack of resources and above all demonstrated the every-day practices the doctors and people facing a serious risk.

Health education became the major tool of health policy in the 20th century Finland. Conditions for that were fine as the nation really believed in education. It was the major promise of better future for the ordinary

people. The campaigns were mostly successful if not always in the ways expected. Anyway, they maintained the idea of collective responsibility of public health, i.e. a common belief in the good purposes of the authorities. This has made Finnish health policy rather effective. Certainly the success was limited at least in cultural terms. A part of the population continued their "unhealthy life-style" over generations. This culture proved to be very much inherited in families of low social status.

Interviews of 20 families in three generations (born in the 1920s, 1940s and 1960s) showed that malnutrition was common experience in the childhood of the eldest generation. Despite the changes of their living standard afterwards, the strong historical memory of malnutrition has affected their views of life, lifestyles and their receptiveness of health education. Many of them discounted, undervalued and denied health education. Although health education has multipled, only fundamental changes like death or disease of a close relative has motivated people to change their lifestyles. Otherwise, stability in work, nourishment, health and human relations has been a distinctive feature in the live of the interviewees.

Teaching healthy manners for school children was successful in Finland. These campaigns were not based on any special medical knowledge but simply repeated the values and norms of decent life using even repressive methods. In the primary schools health education was included in the primer books and reading books. The main purpose was to teach cleanliness, healthy and warm dressing, and good posture. The books gave knowledge about healthy nourishment and necessary vitamins (f. ex. cod liver oil), too. The health education was authoritarian, and it was a way of conditioning children to obedience to their parents and teachers.

In the higher level of the school the health education was given in the context of natural history, biology and gymnastics. There were special textbooks of health education but the emphasis was placed on the teaching of human anatomy. The books embodied also relevant knowledge f. ex. about nourishment, but the health education concerning alcohol and smoking was threatening. Sometimes the temperance education used foreign sources and researches, which were misread, probably on

purpose. Since the late 1960s the information in these textbooks was changed from a prejudiced view to more fact-based education.

The influence of the health education in the schools was surveyed in interview study in the Päijät-Häme area in spring 2004. The main group of interviewed persons belong to the baby boom generation of the late 1940s in Finland, and that is the first generation, which is quite thoroughly examined by the health care system since their birth. The preliminary results show that the memories of the health care and health education in schools are fragmentary and shallow. Many facts and details have been forgotten, but the exiting and frightening experiences (f. ex. vaccination and the investigation of school dentists) stayed in mind. The memory was even shallower when people were asked to cast their mind back to the experiences of school health care as parents of school children. The hardly remembered contacts to the school health care. That's probably because the situation brought nothing alarming.

As a hypothesis we argue that the health education in the schools have not made indelible influences with the young, but the basic conception of health, nourishment and exercise were developed under the school years in a synergy of home and school. The health education in schools has been a part of a large and disparate "droplet infection" of health education and attitudes. In this synergy it is very difficult to separate the weight of individual elements.

FINNISH NATIONAL HEALTH PROMOTION POLICY FROM AN INTERNATIONAL COMPARATIVE PERSPECTIVE

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The project was based on a comparative analysis of comprehensive (Health for All type) national health promotion policies of Finland, Sweden, Denmark, the Netherlands, England and Portugal, in the years 1985–2000. The data consisted of policy documents, background and evaluation studies, grey literature, official statistics and 10–15 expert informant interviews from each country.

The project focused on the overall health promotion policy in the context of changing welfare state. It was planned that within this overall focus, equity in health, mental health, alcohol, tobacco and food and the national policy making level including its interaction with the EU will be the main specific interests. The design was mainly informed by the so called (neo)institutional theory of changes in the modern welfare states.

In the beginning of the year 2005, the project has moved from the data collection and preliminary data analysis phase to the publication of the results. This phase is planned to be ready by the year 2007. Some of the preliminary findings are reported in the following.

The concept of the comprehensive national health promotion policy

The analysis of the reception and adaptation of the approach advocated by the WHO under the slogan "Health for All by the year 2000" brought out three basically different meanings of HFA located in two different phases of socio-economic and welfare state development.

The HFA of the Alma Ata declaration aimed at integrating public health into the social, economic and environmental development advocated by the UN as a central aspect of the New International Economic Order. The central slogan was primary health care, which was understood as embedded in local socio-economic development policy. This approach in health promotion may be identified in the early health promotion policy concepts of Portugal and Finland. However, the transformation of primary health care into "appropriate primary medical care" – as defined in the HFA targets of the WHO European Region – indicated that the idea of the Alma Ata declaration was profoundly changed when it was moved to the advanced welfare states. The welfare state development in Finland and Portugal changed also their policy context and, thus, may be seen as an explanation of the disappearance of the Alma Ata concept, also in these countries.

In the OECD area and, particularly, in the WHO European Region, the Alma Ata conceptualization was largely replaced by the conceptual development of "health promotion". According to our preliminary analysis, two basically different meanings of health promotion were developed. Both of them may be understand as reactions to the demands of welfare state reform in its post-expansive period. They may be called the "managerial alternative" and the "community-based alternative".

The managerial alternative advocates setting targets, indicators, measurement and evaluation according to the managerialist welfare state reform agenda. This is realized in the HFA targets approach and, for example, in the national attempts to follow it in England, the Netherlands and Finland. The fact that this approach has had less success in Sweden, Denmark and Portugal and that it has not been too successful in the three

other countries, either, gives an interesting example of implementation in practice of the managerialist agenda in public health.

The community based agenda may be linked to the communitarian welfare state reform agenda. It may be identified in the documents of the WHO health promotion conferences, since the Ottawa Carter of 1986. This approach has gained quite large support in the public health expert communities of the six countries. However, it seems that the expert communities are quite small and have little influence on social and health politics, and, thus, this approach has not been too successful in influencing the national health promotion policy strategies.

Institutional weakness of national health promotion policy

The preliminary analysis of the institutional basis of comprehensive national health promotion policy underlines the fragmented interests and fragmented actor structure of the field. Integration of the different aspects of health promotion policy is supported by the small "public health expert community" in each of the six countries, but otherwise there seems to be quite weak basis for integration into a comprehensive policy. Thus, the different parts of health promotion policy – such as nutrition policy, tobacco policy, health promoting schools etc – may each have much stronger institutional and interest basis than the comprehensive health promotion policy as a whole.

There also seems to be more opportunities for the integration of health promotion policy at the national and perhaps also at the local level than at the more fragmented middle level. This seems to be a typical problem of health promotion policy in all the six countries: national level comprehensive policies tend to become fragmented at the middle level of both public institutions and nongovernmental organizations. This results in the fragmentation of the policy messages of the national level when they are mediated through the middle level to the local actors. It also prevents effective feedback and influence from the local actors to the national level.

Mental health as a problematic issue for health promotion policies

An analysis of the position of mental health in national health promotion policy documents proves that the claimed marginalization of mental health in national health promotion policies does not seem to be a result of a failure to understand the role of mental health in overall health of the population. The analysis proves that mental health problems are largely recognized as major public health challenges, causing significant economic, societal and human burden. It also proves that mental health is largely recognized as an essential part of overall health. However, mental health seems to be a "problematic issue" for health promotion policies.

The problems of mental health, as indicated in the health promotion policy documents, seem to be problems of definition, measurement, data and often also related to the relationship between prevention and cure. Our preliminary conclusion is that mental health does not seem to be too problematic to the other actors, but it is problematic for the "public health epistemic community". The way in which this epistemic community is used to define, measure, use data and argue seem to be problematic with regard to mental health. Thus, the advocates of mental health promotion might need to work more with the public health expert community.

The position of equity in health in national health promotion policies

The position of equity in health in national health promotion policies seems to differ between our 6 countries. It also seems to differ between the draft policy documents (reflecting more the approach by the public health epistemic community) and the final policy documents (reflecting what is possible for the political decision makers). Clearly, the weak public health epistemic communities tend to put more emphasis on equity/inequity than the political decision makers. Even in Sweden, where the latest national health promotion program was called "Health

by equal terms", the equality agenda was significantly weakened from the draft to the final document.

There seems to be a clear institutional problem in formulating equity-oriented health promotion policy. The analysis of the health situation of the population clearly indicates the significance of social and employment policies for equity in health. However, the institutional traditions and boundaries tend to direct health promotion policies to rather marginal aspects of social policy, mainly to the residualist aspects of social policy, and to keep health promotion out from the formulation of mainstream universal social policies. The consequence is a separation of equity/efficiency trade off in health promotion from equity/efficiency trade off in social policy, which tends to weaken the position of equity in both.

NGOs as the "half-empty third actor category"

An analysis of national policy documents showed that the rhetoric of health promotion policy seems to need a solution to the situation where the responsibility for health cannot be located only to the public authorities or the individuals. The rules of policy rhetoric bans both too large responsibility to public authorities (which is often claimed to be the sin of the "old policies") and too large responsibility to individuals (which is often claimed to be the sin of the "neoliberal policies"). Thus, a third category is needed between them. This much needed third category is NGO (or community, third sector, associations…).

The position of this third category in the latest national health promotion policy documents seems to be quite strong. At the same time, it does not seem to be legitimate to shift much actual responsibility to them. This is indicated in the fact that when responsibility is given to the public authorities or the individuals this is done in a quite concrete ways. But when responsibility is directed to the "third actors", this is done in quite abstract way, only in principle. Thus, one may conclude that the third actor remains a half-empty rhetorical construction that helps in solving the individual/public authority dualism rather than defining the actual role of the NGOs.

EU between globalization and national health promotion interests

The preliminary analysis of the position of EU in national health promotion policies emphasizes the different balance of different policy sectors, actors and interests at the EU level in contrast to the national level. While during the 20 years or so, actors have learned how to negotiate between the different sectors, interests and actors at the national level, EU is mainly felt as a disturbing factor or it is looked only from the perspective of certain particular interests or actors. Thus, a significant policy learning process is ahead.

From the perspective of most traditional health public policies – for instance nutrition, alcohol, tobacco or market regulation policies – EU seems to be a major mediator between globalization (global balance of power) and national government (national balance of power). Without a clearly global health promotion policy development, by the expert communities, national governments and the EU, EU tends to be a mediator of negative pressures on health promotion in the more advanced welfare states – while it may help in moving the balance in favor of health promotion from the perspective of the new EU member states.

PART II

IMMEDIATE COMMUNITIES

PÄIJÄT-HÄME COMMUNITY INTERVENTION STUDY (PHCIS), 2001–2004

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Population in Finland is getting increasingly overweight – a fact that is confirmed by statistics and personal observation. Consequences of this are reflected in the day-to-day functioning of the health care system as an increase in life-style and obesity related diseases such as type 2 diabetes. Concurrently, the population is aging rapidly, and this also partly contributes to the obesity epidemic. Aging is also related to loss of functional capability and increases the need for rehabilitation and finally, for institutional care. A third challenge, less clearly observable, but confirmed in many studies, is inequality of health pertaining not only to those in working age but pensioners as well. Recently, the discussions around inequality have centered to socioeconomic differences in health, but also gender and regional differences prevail, with all three types of health inequalities being interrelated.

Finland is known for many health-related innovations. One of the best known is the North Karelia Project of the National Public Health Institute, KTL (Puska et al. 1995). It has been presented as an impetus to improved cardiovascular health that was achieved combining high risk approach with the general population approach. North Karelia region is no longer the underdog in cardiovascular diseases or unhealthy life-style in Finland. Neither are cardiovascular diseases the sole target of chronic disease prevention. A great societal transition in the last three decades has changed the industrial structure and this has influenced both the

social system and the life-style of the population. The societal trends and changes in the population structure have had influence on the nature of current health threats, affecting different regions of Finland in novel and somewhat unexpected ways.

The idea of a Päijät-Häme community intervention arouse from the long tradition of public health promotion and especially the experience from North Karelia Project in the National Public Health Institute, applied to the modern national health challenges and to the available knowledge concerning the regional differences in population health status. In addition, a regional understanding of a need for these kinds of activities was essential. The state no longer dictates how municipalities should use their resources, and therefore local efforts are needed in health promoting research and development. This was realized in Päijät-Häme in the year 2000, when the hospital district, an administrative body in charge of organizing regional health care, took the initiative for forming a collaborative framework to help the region overcome the challenges for population health.

Health status and goals in Päijät-Häme

The hospital district of Päijät-Häme and its fourteen municipalities formed a collaborative framework called the GOAL Program for Good Ageing in Lahti region (Ikihyvä Päijät-Häme). The framework was joined by the Palmenia Centre for Continuing Education, a regional institute of the University of Helsinki located in Lahti, the National Public Health Institute, the UKK Institute for Health Promotion, the Lahti Polytechnic School, and the Department of Social Policy in the University of Helsinki. The aim of GOAL Program is to promote welfare in the region and thereby to increase its attractiveness and growth. The project was set to last until 2012. The core of the program is a 10-year follow-up study of health and wellbeing in a cohort representing the ageing population. In 2002, a baseline measurement including survey questionnaires, clinical check-ups and laboratory tests was conducted in three five-year age cohorts in the age range 50-74. Together with existing

statistics, the data was analyzed and reported as *Municipal welfare report* (Karisto et al. 2003), and the *GOAL Program baseline report* (Valve et al. 2003). Information from these two as well as further analyses at the National Public Health Institute reported in two manuscripts (Nummela et al. 2005 a, b) form the basis for the following observations and suggestive implications for health promotion initiatives.

Aging is more rapid in Päijät-Häme than the national average, and affects especially the small fringe municipalities living from agriculture. Päijät-Häme exhibits several poor livelihood and health related problems. Pensions are small and unemployment frequent. Level of education is also lower than average. Mortality is higher and life-styles unhealthier – especially in the rural fringe regions. Thus, there is a special need for health promotion in Päijät-Häme, with improvement of living conditions and life-style to combat problems such as type 2 diabetes and impaired functional capability of the elderly. For the municipalities, the challenge is great since they are not wealthy. In the GOAL baseline cohort, a clear association between the economic position of the aging individuals and their health status was observed. Especially the subjective view of having enough money to meet the costs of living was found an important determinant of subjective health status, even more so than the actual income. Regional health differences can partly be explained by the regional variation of social capital. Active participation in leisure-time activities as well as reception of social support when in need was strongly associated with the subjective health status of the aging population.

The results indicate that making provisions for the future is especially important in Päijät-Häme where ageing of the population and the ageing related challenges are rapidly emerging on the agenda of the municipalities. As the municipalities are responsible for the health and wellbeing of the citizens, they need not only information but also efficient instruments. These can then be used solely by the municipalities or jointly with NGO's and businesses. From these premises the GOAL Program incorporated development of novel practices of health promotion and disease prevention into the collaborative framework.

Lay perceptions of life-style changes in Päijät-Häme

To gain insight and background information for the development of life-style counseling practices within the GOAL Program, focus group interview data was collected from 21 lay people in Päijät-Häme, including both men and women aged 50 years or older. The interview agenda included questions about health and healthy lifestyle, health promotion and disease prevention. In the analysis, we searched for accounts about healthy lifestyle and health, and how responsibility for one's health is constructed. (Pajari et al. 2005)

The recurrent and patterned ways of talking about healthy lifestyle were analyzed and designated as five interpretative repertoires: A strong activity repertoire reflects the dominant cultural value of health and emphasizes self-control. Strong links between lifestyle and health are constructed both on personal and general levels. Three counter-repertoires – illness, external barriers, and weak character – share the underlying values of the activity repertoire, but exemplify situations where the individual lacks control over his or her behavior. Finally, a pleasure repertoire questions the rationale of activity repertoire, and discusses other, competing values. The counter-arguments are attempts to avoid the stigma of an inactive individual and attempts to save face in a group situation.

It was also found that people balance deviations from the ideal of activity with temporal and situational specifications of their stories. For example, binging and laziness were described as occasional. Stories about addictions were given as warnings of the other side of pleasure, i.e. uncontrollable pleasure. People also tried to avoid the extreme of rational regulation and rigidity. Hence, the ideal seems to be the principle of golden mean and living in moderation.

The results have implications for health promotion, pointing to a need for discussing also other values besides health. Emphasizing balancing and moderation in health messages would make sense since it seems the lay-peoples' way of dealing with a world full of competing choices

and temptations. Instead of perfection, moderation is a realistic aim of health promotion initiatives. In practice, relapses do occur and they are part of the process of lifestyle change. They should not be interpreted as failures or irrational behavior but part of the process of making changes. For this reason they should not only be tolerated but met with compassion and treated as possibilities to learn. Secondly information is still the core of health education, counseling and promotion. However, applying new information to real life situations is a learning process and mingled with people's emotions as well as the day-to-day rush, concerns and contradictions. Hence, one-sided push of information may be objected as alien to normal living and even interpreted as moralization. People need to have enough room for reflecting their own life situation and competences. Because of the above situation, dialogue should be incorporated into health counseling setting. In dialogue people may express their concerns and constrains and try to find solutions suitable for their life.

Supporting life-style changes in the primary health care

There is a strong evidence base for life-style changes that help to prevent diseases (e.g., Tuomilehto et al. 2001, Knowler et al. 2002), but translating this information into valid models of action for the health care workers is a tremendous challenge. In the GOAL Program, a life-style change intervention was started to study ways to translate the results from randomized controlled trials into the daily practices of health care facilities operating with limited resources. Resources from the Academy of Finland Health research program made possible to develop and test this novel life-style change program (Uutela et al. 2004).

In the life-style change program, behavior change is supported and facilitated by a goal-directed group process. Ageing men and women (50-65-years) assessed to have an elevated risk for type 2 diabetes were recruited to the intervention. In the intervention, evidence based overarching goals for changes in diet and physical activity to prevent type

2 diabetes were adopted from randomized clinical trials (Tuomilehto et al. 2001), but every individual proceeded towards these through self-selected personal intermediate goals. Every individual was encouraged to assume responsibility for his or her own behavior change, and moderation was emphasized rather than perfection. The structure of the sessions was derived from theories developed within health psychology to change behavior (Uutela et al. 2004).

The theoretical model behind the sessions categorizes the change process into three stages: intention formation, action planning and implementation (Schwarzer and Fuchs 1996). Methods from cognitive therapy were employed to increase empowerment in the participants. It was assumed that for a person to change his or her life-style permanently a broader monitoring of the way of life is needed. The group facilitators were instructed to support the group process, guide the goal-oriented working, and to guarantee that a good supportive atmosphere was maintained in the group.

The life-style change model was developed and its implementation planned in 2002. The stage of testing was achieved in the beginning of year 2003. To test the model in the 14 municipalities of the Päijät-Häme hospital district 36 groups of 8–10 persons functioned in 2003–2004. Most group facilitators were public health nurses but also physiotherapists were employed in some municipalities. Facilitators could work solo or together with a colleague. The guided group sessions numbered six, and were distributed to 8 months with the first five with 14 day intervals, and the sixth about five months after the fifth. Group participants were encouraged to meet on their own between the sessions and some groups used this opportunity.

The Päijät-Häme hospital district supported this activity by employing the first dietitian in Finland whose responsibility was solely in prevention, to be used as a shared resource person by the municipalities and their primary health care. She analyzed the food choices of the group participants, gave written report to all individuals and visited all groups to give practical suggestions for making the dietary changes. The

municipal sports and recreation office participated through organizing visits to local sports facilities.

Program evaluation data includes laboratory tests from the participants as well as questionnaire data and qualitative interviews from both the participants and the facilitators. Both effect and process evaluation will be continued with resources from the Academy of Finland Health Care Research Program and the Social Insurance Institution. Data gathering ended in the beginning of the year 2005 and analyses have been started. Experiences from the group activities have been promising, but we need results from the ongoing analyses to find out how efficacious the process has been. There is a need to clarify what supporting measures are needed to implement the model in the daily health care practice.

The goal oriented group work model for life-style change would link most naturally to adult preventive appointments within the primary health care. The whole staff within each health care centre should be informed of this activity and its significance, but also of such practicalities as when the next group will start working. Other members of the health care personnel than public health nurses alone should be able to refer their clients to the life-style change groups. If the life-style change group work were combined with self-monitoring of blood pressure, cholesterol and blood sugar level, and information of life-style changes were entered into the electronic patient registry, many steps would be taken forward in making disease prevention by life-style change more systematic and effective.

Improved functional capability to the aged

As part of the Päijät-Häme Community Intervention Study and the GOAL Program, promoting of active aging is emerging as another target of health promotion in the region. Strengthening the information base was achieved when the municipal welfare report (Karisto et al. 2003) was finished. Linkages supporting functional capability program implementation were strengthened through GOAL Program visits to municipal executive administration in 2004, leading to intensified

collaboration through a high level health promotion network with nodes in each of the 14 municipalities. The municipal health and social care personnel have been defined as program users, and new methods and applications are developed together with them. The Palmenia centre provided a project framework for the implementation of the intervention. The implementation will begin in 2005. From the beginning of 2005, the project is also supported by the Healthy Aging Research Program in the National Public Health Institute.

Evidence shows that functional capability can be maintained or even improved with relevant goals for increasing physical activity, making food choices healthier and strengthening the social network. The functional capability intervention within the GOAL Program incorporates evidence-based goals with personalized goal planning model adapted from the life-style change group intervention. Target population will be those over 75 years of age, with a need of home care services. The municipal home-care employees will be educated to use this goal-directed model to promote welfare and health among their ageing clients.

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IMMEDIATE COMMUNITIES AND INDIVIDUAL SOCIODEMOGRAPHIC DISADVANTAGE – A STUDY OF THE EFFECTS OF AREA AND INDIVIDUAL CHARACTERISTICS ON HEALTH AND CAUSE-SPECIFIC MORTALITY

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Individual level research into social determinants of ill-health and mortality has often been complemented by ecological analyses of the effects of characteristics of areas and neighbourhoods on health. For some, ecological level data are just poor substitutes for individual level data. However, the underlying rationale of an increasing number of recent area studies is that the characteristics of areas have an effect on the health of individuals over and above the personal characteristics of these individuals. It is for example assumed that people living in poor areas have poorer health even if they are not poor themselves. In other words, area differences in health are not just due to compositional effects – e.g. poor people live in poor areas – but area characteristics have true contextual effects over and above the characteristics of the individuals.
The contribution of area context to health and mortality of individuals has now gained policy relevance as it may be suggested that interventions to promote health should focus on efforts to improve neighbourhoods and communities in socially disadvantaged areas. So far, little evidence in Finland exists on the effects of area characteristics on morbidity or mortality based on multi-level techniques that can use data combining information on both individuals and areas.

Conceptually three domains of area characteristics that may impact on health can be identified. However, the demarcation lines between the three domains are vague. These three domains are physical environment (e.g. air quality), socioeconomic environment (e.g. mean income) and social environment (e.g. trust between residents). We focus on the latter two domains.

Two important themes of scientific interest can be identified in our work: (1) to quantify area variability in morbidity and mortality, and identify the characteristics of areas that are associated with this variability, (2) to assess to what extent these area effects can be accounted for by differences in the individuals residing in these areas. Furthermore, it is important to realize that small area effects manifest themselves in different urban or national contexts. Differences in the social structure of countries in which regional level differences are studied may be important. Thus, international comparisons of country context are also of major relevance to our work. Some of the main findings are summarised below.

Analyses of area characteristic on mortality

Using census records linked with death records for the total population, we show that area differences in male mortality between 55 neighbourhoods in the Helsinki Metropolitan area are large. Those living in socioeconomically disadvantaged areas and areas of low social cohesion have higher mortality than men living in other areas. Most of this variability can be explained by compositional differences of individuals living in these areas. However, we observe modest independent effects of low area-level socioeconomic structure and social cohesion on total mortality, particularly between 25 and 64 years of age. Accidental and violent causes, alcohol related causes and diseases of the circulatory system contribute most to this independent effect. Area characteristic do not consistently modify the effects of individual sociodemographic characteristics on mortality in this study. In addition, the effects of individual socioeconomic status on mortality were not attenuated by adjustment for characteristics of areas (Martikainen et al. 2003). Unpublished preliminary results also indicate that similar area

differences in mortality can be observed among women and that these differences have remained remarkably constant, although variation in area social characteristics has increased (Kauppinen et al. 2005).

We also studied whether neighbourhood differences in mortality that were observed in Finland were of the same magnitude in other countries. We measured neighbourhood deprivation in terms of area unemployment levels in urban areas in six countries (United States, the Netherlands, England, Finland, Italy and Spain). After adjustment for individual level education and occupation, living in the quartile of neighbourhoods with the highest as compared to the lowest unemployment rates was associated with increased hazard of mortality in men (1.14–1.59) although in England the association did not achieve statistical significance. The highest hazard ratio, found in the US (hazard ratio 1.59) attenuated to a similar level as found in the other studies after further adjustment for race. Thus, there is no evidence that the country the individuals lived in substantially modified the association between neighbourhood deprivation and mortality (van Lenthe et al 2005).

Of the characteristics of much larger area units, 84 functional regions of Finland, socioeconomic structure, family cohesion and voting turnout are consistently related to alcohol-related (N=9820) and suicide (N=13589) mortality, although these associations are strongly attenuated after adjustment for individual level factors. Hypotheses of interaction between individual and area socioeconomic status for suicide are not supported (Blomgren et al. 2004, Martikainen et al. 2004).

The effects of median income and income inequality are small and not consistent for alcohol-related and suicide mortality in the Finnish data. This observation is in contradiction to the hypotheses put forward by Wilkinson. However, almost uniquely previous analyses of this hypothesis are based on cross-sectional data, and are thus weak at identifying causal effects. We aimed at further evaluating this hypothesis using longitudinal Swedish, UK and Finnish regional level data on mortality and income inequality change. These analyses suggest that the hazard of dying is lower in periods of higher income inequality, thus again giving no support for the income inequality hypothesis (Adda et al 2005).

Analyses of the effects of area characteristics on morbidity

As compared to mortality, the area effects on physical functioning and mental well-being are somewhat smaller. In particular, small-area variation of mental well-being is nearly non-existent, especially when individual characteristics are accounted for. However, some socioeconomic characteristics of neighbourhoods, such as level of education and share of manual workers in the area, have a modest independent effect on physical functioning in a working middle-aged population over and above of their individual characteristics. Furthermore, partitioning the area effect to population sub-groups shows that the cross level interaction effect follows a somewhat different pattern as compared to studies carried out elsewhere. Our results indicate that individuals living in deprived areas have lower level of physical health irrespective of their individual characteristics. On the other hand, living in non deprived or even well-off areas does not seem to enhance the physical health of those whose individual socioeconomic position is lower. It hence appears that being in a deprived position in either level has a detrimental effect on ones physical health (Sipilä & Martikainen 2005).

Preliminary analyses on health related behaviours suggest that the contribution of area effects to geographical variation is more profound. Unpublished results on smoking using survey data on a working female cohort (Karvonen et al. 2005) indicate that area differences are not only larger than those observed for morbidity, but also far less attenuated when the compositional effect is accounted for.

Furthermore, deviant and criminal behaviour and victimization are phenomena that are particularly prone to neighbourhood level area effects. Using survey data on violent victimization of adolescents, contrasted with characteristics of their living environments both at the family- and at the neighbourhood level, we show that both of these environmental contexts have an independent effect on the risk of victimization (Savolainen et al. 2005).

For smoking, the measure of area social structure was the most important area variable, although the effect was halved after adjustment for

individual level socioeconomic determinants. For violent victimization, not only area level social structure but also markers aiming to measure local capability for social control, such as share of single-parented families, had a strong effect, which persisted after accounting for both individual and family level variables.

In a comparative work on small-area variation of self rated health of public sector employees, we showed that neighbourhood socioeconomic context was associated with health in both Helsinki and London. However, there was some evidence of slightly greater neighbourhood effects in London. In pooled data of both cities, residence in a neighbourhood with highest unemployment was associated with an odds ratio of less than good self-rated health of 1.51. Greater socioeconomic segregation in London may have emergent effects at the neighbourhood level. Local and national social policies may reduce, or restrict, inequality and segregation between areas (Stafford et al. 2004).

International comparison of socioeconomic health differences

In addition to the analyses that assessed whether small area differences in morbidity and mortality vary between countries, we also carried out analyses comparing how different socioeconomic indicators were associated with health in different countries. Such analyses were motivated by a desire to validate findings in different populations. In addition, comparative studies of populations in different countries may help us understand the limits of explanations of social inequalities in health obtained in particular settings, and caution against uncritical extrapolation of results to other countries. Furthermore, comparative studies are often the only feasible way to assess how broader social contexts and policies influence health. However, most of the comparative studies to date are based on 'routinely' collected survey data (self-reported morbidity) or readily available register data (mortality).

We show that despite large differences in the provision of welfare services, relatively similar educational and income differences in mortality were

observed in Finland and the USA. However, multivariate analyses of individual level data provide some evidence to argue that the effects of income are more pronounced in the USA, while educational mortality differentials are somewhat larger in Finland (Elo et al. 2005).

In further analyses we compared the relationship between household equivalent income and self-assessed health in seven European countries (Belgium, Denmark, England, Finland, France, The Netherlands, and Norway) in the 1990s. A higher household equivalent income is associated with better self-assessed health among men and women in all countries, particularly in the middle income range. In the higher income ranges, the relationship is generally curvilinear and characterized by less improvement in self-assessed health per unit of rising income. In the lowest income ranges, the relationship is found to be curvilinear in four countries (Belgium, Finland, The Netherlands, and Norway), where the usual deterioration of health associated with lower incomes levels off or even reverses into an improvement. However, overall the country differences in Europe were relatively small (Mackenbach et al. 2005).

An attempt was also made to look further a field, and include Japan into our comparisons. Largely similar socioeconomic inequalities in health were found among British and Finnish men as well as women. In contrast, differences among Japanese men were somewhat more inconsistent, and among Japanese women non-existent. Labour market attachment among Japanese women is very weak as compared to that in western European countries (Martikainen et al. 2004). Also socioeconomic differences in long-term sickness absence in Japan were smaller than in Britain. These differences were not fully explained by self-rated health and health behaviours. It is possible that differences in work characteristics as well as absence cultures and organisational differences contribute to these country variations (Morikawa et al. 2004).

Based on theoretical literature, smaller socioeconomic differences in health were hypothesised in the Nordic countries, but this is not clearly confirmed by empirical evidence carried out within this programme and elsewhere using a variety of socioeconomic indicators. We propose that a combination of unique historical or cultural circumstances and

'unanticipated and undesired side effects' of welfare states may partly explain this unexpected empirical finding (Dahl et al. 2005).

Conclusions

We have shown that mortality and physical morbidity differentials between small neighbourhoods in the Metropolitan area of Helsinki are relatively large. However, most of these area differences can be accounted for with differences in the individual characteristics of the residents of these areas. Larger area effects, that are independent of individual characteristics, can be observed for larger area units (functional regions, of which there are 84 in Finland). These area effects are particularly large for alcohol-related mortality and suicide.

Overall, mortality and morbidity differences between areas are of roughly similar magnitude in Finland as elsewhere in Europe. For morbidity slight evidence of smaller differences are observed between small areas in Helsinki than in London.

Comparative analyses of country contexts indicate that socioeconomic differences in morbidity and mortality in Finland are also of similar magnitude to those in other European countries and the United States. However, there is some evidence to argue that the effects of income are more pronounced and curvilinear in the USA, while educational mortality differentials are larger in Finland.

Last decade in social epidemiology has been marked with a rapid increase in the number of studies exploring contextual effects on health. One reason for this expansion has been the introduction and advance of multilevel methodology, which helps to unravel and account for the possibility of an interdependent hierarchical structure of individual observations. However, in Finland this type of research has been rather scarce and scattered.

The aim of our study was to respond to this shortage by introducing several sub-studies exploring the degree and determinants of area

variation in morbidity, mortality and health related behaviour. Furthermore, as different health related contextual processes may take place in various environmental settings, we have carried out studies conceptualising the level of social context both at the level of small urban areas (neighbourhoods) and at the level of regions (functional areas). In addition to national level studies, we have carried out a number of studies, which aim at comparing the impact of environmental contexts at an international level. These include comparisons of metropolitan neighbourhoods as well as regions. The rationale behind the comparative approach lies in assessing the potential effect of different types of welfare regimes and policy approaches on spatial inequalities in health.

A methodological challenge of all analyses of the effects of area characteristics on health is that researchers may: (1) use area units that do not capture the right level of regional differentiation, (2) inadequately measure characteristics of areas and individuals, and (3) not account for residential migration. These issues are discussed in detail in our published articles, and further work is currently under way e.g. with regards to selective migration.

The fact that contextual effects on health are rather small in Finland could be argued to reflect the deliberate policy actions to reduce and restrain social segregation both at the small area and at the national level. Although not alarming in scope, the contextual effects on different types of health measures are persistently and systematically connected with several measures of social status and cohesion at different area levels. However, emphasising Finnish (or Nordic) uniqueness may be misplaced as the magnitude of contextual effects, and social inequalities in health are broadly similar in other European welfare states and the USA.

Our findings and research by other authors suggest that from the beginning of the 1990's area segregation in the Helsinki Metropolitan area has been widening. The results of our study indicate that if these trends continue into the future, they might be accompanied with the emergence of increasing contextual effects on health and health related behaviour.

The question of the underlying causes of the effects of social environment on health is all but clear and the processes are manifold and may vary for different social groups. However, the results indicate that improving the areas and larger contexts people live in may improve population health. A sound way to further disentangle the causes of area differences in health in a manner that might also have more direct policy relevance is to carry out further research using more easily modifiable area characteristics, such as local supply and quality of services and amenities.

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HEALTH EFFECTS CAUSED BY URBAN AIR POLLUTION FOR THE TRANSPORT SYSTEM PLAN SCENARIOS IN HELSINKI AREA – HEAT

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We have evaluated traffic flows, emissions from mobile and stationary sources, ambient air concentrations, indoor concentrations, exposure to air pollutants and the resulting health effects. We also attributed the urban outdoor and indoor pollutant concentrations and personal exposures to the main source categories, with emphasis on primary-combustion originated PM. The project also analysed the main determinants of the population exposures to air pollutants. We estimated the Burden of Disease (BoD) caused by air pollution for each of the Transport System Plan (TSP) scenarios in order to compare their relative public health impacts.

The project resulted in refined methodologies and new predicted results of exposure; it will finally result also in practical recommendations on the most cost-effective ways in order to abate and minimise the health effects caused by air pollutants in urban areas. These methods and results can directly be used to promote the public health.

Development and evaluation of deterministic models

The modelling system for evaluating traffic flows, emissions, atmospheric dispersion and population exposure has been refined and extended to treat in more detail urban fine particulate matter (PM). The Transport Department of YTV has updated their modelling system in order to compute the emissions of the revised Transport System Plan scenarios in the Helsinki Metropolitan Area for years 2002 and 2025. A traffic demand modelling system that predicts macro scale traffic was updated on the basis of the travelling habit survey conducted in 2000. In addition, land use scenarios for year 2025 were estimated by the Development Planning Unit (YTV).

Based on this data, an updated modelling system (EMME/2) was used to produce the predicted flows of vehicles and travellers to and from the transportation facilities. Using predicted flows of vehicles and new emission factors, vehicular emissions of PM, NOx, HC and CO were computed. The emission coefficients have been updated in cooperation of the YTV, VTT and FMI, including the exhaust emissions of PM from vehicular traffic.

An population exposure model, EXPAND (EXposure model for Particulate matter And Nitrogen oxides, Kousa et al., 2002), was used to evaluate the spatial and temporal variation of average exposure of the urban population to ambient air pollution in different microenvironments. The EXPAND model combines the predicted concentrations and the information on people's time use at different locations. A new model version, developed in this project, allows for the use of hourly time-activity, concentration and other data, and it includes a more detailed treatment of various traffic modes than the previous version. The computed results are processed and visualised using GIS, which is indispensable for the presentation of the results that illustrate, e.g., the most problematic areas and time periods.

Model computations for $PM_{2.5}$ have been conducted in the Helsinki Metropolitan Area, for the years 2002 and 2025. The results include

hourly averaged concentrations computed in a grid network, with a spatial resolution ranging from 10 to 500 m. The predicted urban $PM_{2.5}$ concentrations in the Helsinki metropolitan area in 2002 are presented in Figure 1a.

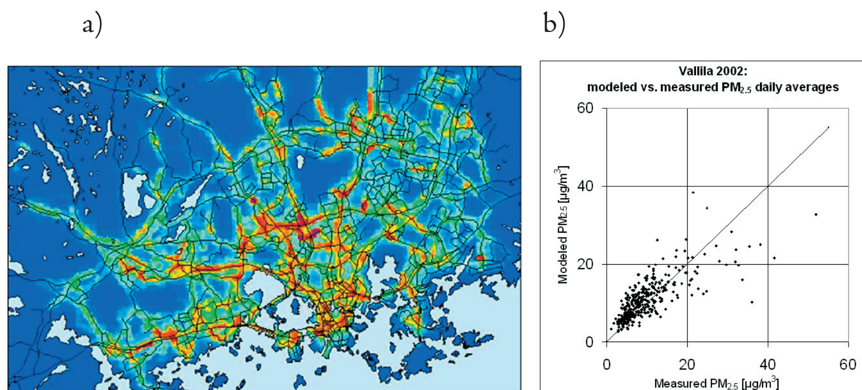

Figure 1. *Predicted total yearly average concentrations of $PM_{2.5}$ [µg/m³] in the Helsinki metropolitan area in 2002 (a) and the comparison of observed and modelled daily average concentrations of $PM_{2.5}$ at the station of Vallila (b).*

The performance of the modelling system for PM has been analyzed against the measurements (Karppinen et al., 2004ab; 2005ab). The comparison of the daily averaged values with the corresponding measurements showed a good agreement. (Figure 1b.)

Also, more detailed evaluations of the performance of different dispersion modelling system components is performed. The accuracy of the street canyon dispersion model has been evaluated against experimental data, in cooperation with Danish scientists (Kukkonen et al., 2003). The influence of various aerosol processes on particulate matter concentrations has been analyzed in a street scale, in cooperation with Stadia and University of Helsinki (Pohjola et al., 2003). The performance of the statistical modelling system for long range transported PM has been analyzed in (Karppinen et al., 2004c).

As an example of the hourly population exposure calculation results in Helsinki Metropolitan Area the spatial distribution of the population exposure on an inversion-induced episode at 7–8 pm is presented in figure 2.

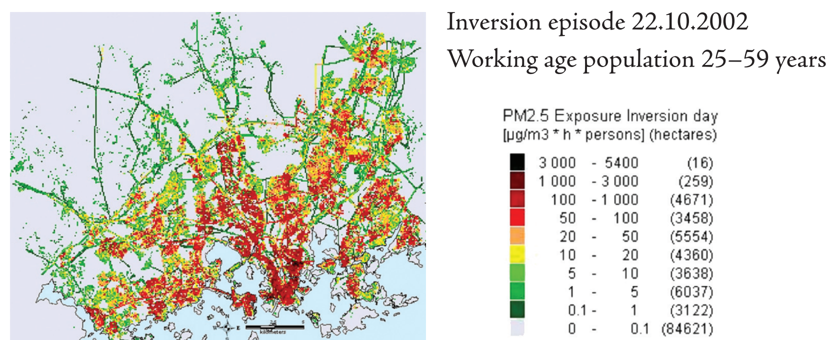

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Figure 2. *Spatial distribution of the $PM_{2.5}$ exposures of the working age population (25–59 years) on an inversion-induced episode day at 7–8 p.m.*

Source apportionment

Source apportionment of $PM_{2.5}$ has been performed using Principal Component Analysis (PCA) on the EXPOLIS database. Also ULTRA I data was analysed using Factor Analysis (FA) and Multiple Linear regression (MLR) methods (Vallius et. al. 2003).

The main source categories in ambient air in Helsinki were inorganic secondary particles, particles originated from combustion sources including traffic exhaust emissions, mineral dust and sea salt. In residential and workplaces, also detergents were identified as an indoor source. Personal exposure to $PM_{2.5}$ was a combination of the particles originated from the sources found in the residential and workplace microenvironments, and those from behavioural sources, such as smoking.

Additionally the contributions of the main sources to exposure were analysed using mass reconstruction technique for both EXPOLIS and ULTRA. The results for EXPOLIS are presented in Koistinen et al. (2004), Jantunen et al. (2003) and Jantunen (2004), with particular emphasis on the traffic source.

The source apportionment of $PM_{2.5}$ using PCA has also been performed with the additional inclusion in the analysis of selected organic compounds, which are known to be related to traffic emissions. This study has indicated so far that no individual element in $PM_{2.5}$ that is available in the database is univocally associated with emissions from urban traffic in the Helsinki metropolitan area.

Probabilistic exposure modelling

Probabilistic population exposure modelling technique has been developed and validated against the observed data in Hänninen et al, (2005). Figure 3 illustrates that the highest exposures occurred during a vegetation fire episode and lowest during an inversion day. Exposure distributions for all episodes were significantly higher than the annual reference distribution. When compared with the daily average concentrations observed at the two available fixed monitoring sites (Kallio & Vallila), it is evident that during the two LRT episodes the observed concentrations represent highest exposure percentiles.

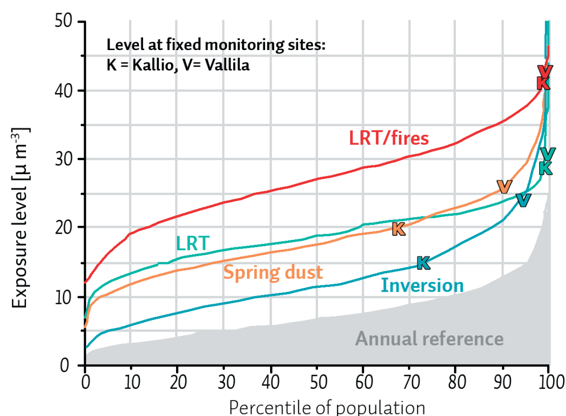

Figure 3. *Comparison of 24-h exposure distributions during the selected episodes and corresponding observed levels on fixed monitoring sites.*

Extracting the exposure distributions of traffic generated particles from the combined and critically evaluated results of the different source apportionment techniques, and applying them in probabilistic simulation of traffic tailpipe particle exposures for three different population groups for the 2000 and 2025 scenarios produced the estimates presented in Table 1.

Table 1. *Tailpipe particle exposure distribution parameters for three target populations in the Helsinki Metropolitan Area modelled for year 2002 and 2025.*

	2002		2025		Change	
	mean	sd	mean	sd		
	µg m^{-3}	µg m^{-3}	µg m^{-3}	µg m^{-3}	µg m^{-3}	%
Elderly	0.76	1.86	0.48	1.30	0.28	36
Infants	0.14	0.25	0.07	0.14	0.07	50
Working age	1.37	1.32	0.91	0.92	0.46	34

Evaluation of the adverse health effects

Health effects have been evaluated using an expert panel. The panel was founded within KTL using air pollution and other experts from different fields: epidemiology, air hygiene, exposure assessment, human and animal toxicology, source apportionment, and risk analysis. It has reviewed new key articles of air pollution epidemiology and risk assessment, and current reviews of key questions in air pollution research.

Along with this work, the group has developed a holistic risk model that contains two parts. First, it represents the causal emission-exposure-effect chains and their mathematical relationships. Second, it contains the original data from which the representations are derived, and

arguments supporting/conflicting the data used. In this way, the model is able to calculate the actual risk and also express the thinking process that lead to the specific calculations.

The health effects of the traffic emissions were estimated by using a life-table model (Tainio et al., 2005), which was implemented using AnalyticaTM version 3, Monte Carlo simulation program. The model estimated both changes in the expected life-expectance of the year 2002 Helsinki Metropolitan Area population and the quality adjusted life years (QALY) of the same population with and without the estimated change in the air pollution levels. The model included health effects both for the infants and for the adult population. Latency between air pollution levels and health effects was also estimated.

Conclusions

Using the dispersion and exposure models it is possible to estimate which fraction of the total exposures could be reduced by setting limitations for e.g. private car traffic or local industrial activities. Comparison of the alternative, locally relevant options and estimation of the health risk reductions for each option allows the decision-makers to protect the public health in the most efficient way. The same modelling tools can be utilized in long-term planning. Population exposures can be estimated for e.g. alternative traffic system scenarios, as is done in Helsinki as part of the metropolitan area transportation system planning.

The modelling tools can be used to estimate exposure fractions from various sources, including the long-range transported pollution, and thus the models can be utilised also in setting priorities for local, regional, and international emission reduction activities.

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PART III

OCCUPATION HEALTH

SOCIAL NETWORKS IN PROMOTING WELL-BEING AT WORK

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Researchers Päivi Husman and Riku Nikkilä

The project consisted of two study settings: "The structure and function of MWA networks" (setting 1) and "Intra-organisational networks, social capital and well-being" (setting 2). Settings in this project demonstrated how different aspects of social networks facilitate maintenance of work ability (MWA) activity and promote well-being at the workplace level.

Setting 1: The structure and function of MWA networks

The empirical studies shed light on the various functions of social networks in facilitating the process and co-ordination of work ability promoting activity and employee well-being. MWA is a multi-disciplinary activity, which brings together experts from diverse institutional settings to pool their knowledge. Service providers and other actors in the social and health service system (e. g. actors in occupational health services and occupational health and safety) comprise a network of promoting well-being at work. Communication and interaction processes increase understanding of the dimensions of workplace well-being.

The data have been collected (1 700 workplaces, 4 500 interviews), analysed and the articles have been published. The results of the study have been presented in national and international scientific conferences.

Setting 1: Results

Most important findings were: MWA at workplaces solves quite poorly problems in well-being at work. That is because MWA and problems in well-being at work do not meet each others. Workplaces also utilize poorly the expertise and services of different experts and actors of service system in their MWA activities. The most common and important network partner of workplaces was occupational health services. Trust between workplace and service providers was the most important factor in successful networking in MWA.

The results give knowledge to workplaces how to network with different experts and actors of service system in the field of MWA. Reminds the importance of trust in cooperation relations. Stresses the importance of evaluation of well-being needs before MWA activities at workplace will be started.

Setting 2: Social networks, job control and stress in work organisations

The doctoral study regarding social networks, job control and work stress was part of the project "Social networks in promotion of workplace well-being". The study focused on intra-organizational networks and employees' experiences of their jobs, working conditions and well-being at work. The study was based on a motive to understand to what extent a social network analytic approach could bring new insights into research on associations between working conditions and workplace well-being. The purpose was also to apply the results in development of new methods and practices for diagnosing and remedying organizational problems and promoting employee well-being.

Economical and societal changes have often been seen as precursors to work overload and stress in work organizations, but researchers have largely overlooked the processes through which these macro-level changes are reflected in organizations and ultimately, how they are transformed into pressures felt by individual employees. Generally, organizational research has identified factors related to organization

of work as important antecedents of work motivation, job satisfaction and workplace well-being. However, psychologically oriented research has explained these with variables related to employee personality and attitudes, or socio-demographic and formal organizational categories. The network analytic approach argues that organizations should be seen as social networks composed of work related connections between employees, and that the networks that employees are members of to a large extent define their actions and experiences at work.

The aim of this research was to find out whether intra-organizational networks are associated with perceptions of job control, satisfaction and work stress. Previous research on how networks affect these outcomes has been limited. The role of perceived social support as a moderator of the effect of stressors on strain has been shown, but social network analytic methods in the context of workplace stress have been rarely applied. In this study, data on workplace social networks and employees' work related perceptions were collected on employees of three private and two public organizations in 2002 in the course of workplace development intervention. Some research results were utilized in conjunction with consulting sessions and the participating organizations were given a report of the main findings that could be used in improving organizational processes.

Setting 2: Main results

The main result of the study was that intra-organizational networks are related to both positive and negative work related experiences of employees. Both a central position in the communication network and having relationships to managerial levels were associated with increased control and learning opportunities among blue-collar workers. Reciprocal relationships to managers were especially important. An advantageous position in network structure (i.e. structural holes) was not beneficial if network links did not provide direct access to the managerial level. Thus, the study confirmed the main proposition of the resource-based theory of individual level social capital, which states that contacts to higher status persons are key to better resources. The network effects also remained

after controlling for individual and organizational characteristics. The results reflect the opportunities and benefits that individuals may gain from new flat organizational forms. Workers are less tied to formal hierarchy and thus are more free to build diverse network relationships and consequently, enhance their personal control at work

However, the study also showed that there is a downside to large workplace networks and increased autonomy, which is manifested in perceptions of workload and stress. An important result regarding workplace well-being was that a large number of important task related network relations was associated with increased work overload. In the two manufacturing organizations included in the study, production workers who were most central in work-flow networks reported higher workload and time pressure than others doing same kind of work, despite their higher job control. This was interpreted as role overload, which occurs when demands imposed on an employee by others exceed the capacity of the employee to perform all expected tasks in time. Perceived support and feedback from managers did not affect this association. On the other hand, belonging to a dense advice network characterized by strong frequent relationships was associated with decreased stress symptoms. This result provides support for the view that social integration promotes mental well-being, also in organizational contexts.

Setting 2: Conclusions and utilization of results

The size of the active work force is declining as the baby-boomer generation is retiring. An important incentive for keeping people at work is to improve working conditions. Thus, knowledge on factors that explain work motivation and stress are important for prevention of employees' early retirement in Finland. The main conclusion of the study is that for understanding work well-being it is more important to focus on organizational factors than indvididual level factors. Results have implications for theories and methods regarding study of social relationships, support and stress within organizations.

It is proposed that the social network analytic approach should be applied in future workplace development interventions for diagnosing

organizational structures, processes and ultimately, in improving employee well-being. Social networks provide a way to study the functioning of organizations and the consequences of social relationships for employees perceptions. In today's working life understanding workplace networks is increasingly important since flat organizations may expose employees to more role conflicts and stress than traditional hierarchies.

Results may be utilized in developing social network analysis based tools for workplace development interventions. Network analysis can be used for diagnosing possibly stressful aspects of organizational structure and for providing directions for improving organizational processes and employee well-being.

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A COMPARATIVE STUDY OF THE EFFECTS OF WORK-HOME INTERFACE, SOCIOECONOMIC POSITION AND AGEING ON HEALTH AMONG EMPLOYEES: THE HELSINKI HEALTH STUDY

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Work and non-work related determinants of socioeconomic inequalities in health and health behaviours

Socioeconomic inequalities in health related outcomes are well established, but less is known about pathways and interrelationships in the production of health by various socioeconomic, work related and non-work related determinants. Even less is known about the relative importance of socioeconomic and other determinants of health in different countries. There is a range of various indicators of health, health behaviours and risk factors, and the patterning of these by various socioeconomic and other determinants is likely to vary by subdomains of health and health behaviours.

Helsinki Health Study

Our project therefore used multidisciplinary and innovative approaches in the study of a broad range of socioeconomic, work related and

home related determinants of health and health behaviours. Firstly, we compared socioeconomic inequalities in health between Finland, Britain and Japan, representing different welfare state arrangements. Secondly, we studied associations of conflicts between work and family and their importance to mental and physical health. Thirdly, we studied the complex socioeconomic production of health and, fourthly, health behaviours. This was done within the Helsinki Health Study, which is a cohort of middle aged employees from the City of Helsinki (Lahelma et al 2005a, www.kttl.helsinki.fi/HHS), in comparison to similar cohorts from Britain and Japan.

Focusing on ageing employees approaching their retirement age is highly justified since particularly in Finland these groups cover large post-war baby-boomer generations. It is a key social and health political issue to prevent premature loss of work ability and subsequent early exit form work among these segments of population.

Variations in the socioeconomic patterning of health among Finnish, British and Japanese employees

Nationwide European comparisons of socioeconomic inequalities in morbidity suggest that in Finland these inequalities are of average European magnitude and correspond to those found in Britain (Kunst et al 2005). However, the development of health inequalities may be more stable in Finland than in most other European countries in which inequalities tend to widen.

Comparisons with non-European countries are rare, but within our collaborative networks we have been able to compare health inequalities among men and women in Finland with those found in Britain and Japan (Martikainen et al 2004). Our results reconfirm the similarity of the pattern and magnitude of health inequalities among men and women in Britain and Finland, i.e. lower status employees having gradually poorer health. Also, Japanese men mostly follow a similar 'western' pattern of health inequalities. However, Japanese women

provide a deviant case, since socioeconomic differences in their health were small and inconsistent.

Overall, the results suggest that, among men, different welfare state regimes in Britain, Finland and Japan produce largely similar patterns of socioeconomic differences in morbidity. Among Japanese women, in contrast, different patterns of labour force participation and welfare provision bring about unsystematic patterns of socioeconomic differences in morbidity.

Work-family conflicts as determinants of mental and physical health

Further comparative studies have examined work-family conflicts and mental health functioning equally in Finland, Britain and Japan (Chandola et al 2004). There are previous studies on the effects of multiple roles, i.e. combining being a parent, spouse and employee, on health particularly among women (Lahelma et al 2002). Nevertheless there is little investigation among both genders and on the psychosocial content of such roles, including conflicts between paid work and family life. These conflicts provide new insights into the social determinants of health among employees. We found that the bearing of the direction of conflicts, work-to-family or family-to-work is relatively unimportant. Conflicts between work and family were stronger in Japan and Britain than in Finland. Mental health was affected both by work-to-family and family-to-work conflicts among men as well as women in the three different countries. Mental health among Finnish employees tended to be better than that among their British and Japanese counterparts. Particularly among Finnish women their somewhat better mental health is likely to be partly due to their weaker work-family conflicts as compared to Japanese and British women. Thus work and family roles and the successful balance between the two may be important to mental health among women and men in industrialised societies.

Country-specific analyses of work-family conflicts among Finnish employees have examined associations of these conflicts with additional

subdomains of health. Work-family conflicts are found as often among women as men (Lahelma et al 2005b). While milder conflicts are common, stronger conflicts are relatively uncommon. Analyses suggest that self-rated health is associated with work-family conflicts: the stronger the conflicts, the poorer the health (Winter et al 2005). This association appears not only to be strong among women and men, but also independent of several well-known sociodemographic and socioeconomic determinants of health.

Taken together, our findings confirm that work-family conflicts add our understanding of the social production of health and should be considered in future studies.

The complex socioeconomic production of health

Previous studies have typically relied on one indicator only as a marker of the broad concept of socioeconomic position. Therefore a basic idea in our work was to examine socioeconomic inequalities in health and health behaviours starting from the concept of socioeconomic position itself. Socioeconomic position is a multidimensional theoretical construct that covers a variety of social and financial circumstances (Lahelma et al 2004). A deeper understanding of socioeconomic inequalities in health requires more attention to how socioeconomic position is constructed and how it can be measured. While there are several indicators of one's position in the socioeconomic hierarchy, these indicators also represent different dimensions of socioeconomic position. The mechanisms how each of these dimensions relates to health may at least partly be different, and any single indicator is unlikely to provide a sufficient explanation for socioeconomic inequalities in health. However, few previous studies have used several socioeconomic indicators, and only recently has attention been paid to interrelationships of and pathways between the various indicators.

In our studies we have examined a range of past and present socioeconomic indicators, including parental education, childhood economic difficulties, own education, occupational class, household income, home ownership,

economic difficulties and economic satisfaction. Parental education generally indicates one's socioeconomic circumstances in childhood while childhood economic difficulties represent more concretely the financial circumstances of childhood. Own education is a major factor in sorting people into positions with different tasks and rewards, and more than the other socioeconomic indicators it relates to knowledge and skills as well as values and attitudes. Occupational class is a key indicator of one's structural position and social standing and reflects e.g. physical and psychosocial working conditions, whereas income is a key indicator of material resources. Home ownership is a commonly used indicator of material resources, especially cumulative wealth. Economic difficulties represent material circumstances in their concrete and immediate form, and economic satisfaction reflects the subjective experience of one's material and socioeconomic circumstances.

Another important feature highlighting the interrelationships between the various socioeconomic indicators is that they are causally successive. Thus, one's educational attainment contributes to occupational social class, which in turn partly determines the level of income. This succession was taken into account in our multi-dimensional analyses of the associations between the various socioeconomic indicators and health outcomes sequentially. We use similar approaches for several subdomains of health and health behaviours, including general self-rated health, common mental disorders, smoking, relative body weight and problem drinking.

Our studies suggest that a multi-dimensional socioeconomic approach is useful and deepens the findings obtained by using more simplistic approaches in previous studies. The main results for self-rated health show that when examined individually each studied socioeconomic indicator is inversely associated with health (Laaksonen et al 2005a). There are interrelationships and pathways between the indicators. Own education and occupational social class showed consistent associations with health but that of income did not after taking other socioeconomic indicators into account. There was an educational pathway and the effects of parental education on health were mediated through own education. Economic difficulties in both childhood and adulthood showed clear

associations with health on top of the conventional socioeconomic indicators.

Findings from our studies on mental health differ from general and physical health (Lahelma et al 2005c). Past and present economic difficulties were strongly associated with common mental disorders whereas there were even reverse associations for parental education and own occupational class, independent of the other socioeconomic circumstances.

The patterning of health behaviours by multiple socioeconomic indicators

Multi-dimensional socioeconomic approaches have also been applied in the studies of health behaviours and risk factors. These studies have focused on smoking, relative body weight and heavy drinking. Additionally, associations between working conditions and health behaviours have been investigated, taking socioeconomic factors into account. Previous studies using simplistic approaches have shown that unhealthy behaviours are more prevalent among those who come from lower socioeconomic positions, those who have economic difficulties and among lone mothers. However, little is known about the interrelationships of the various socioeconomic circumstances as determinants of unhealthy behaviours.

Our results confirm that economic difficulties and lone parenthood are associated with smoking independently of one's own education, occupational class, household income, home ownership as well as social relations among both men and women (Rahkonen et al 2005b). Additionally, each socioeconomic indicator is individually strongly associated with smoking (Laaksonen et al 2005b). Again interrelationships between the socioeconomic indicators are found. Thus, using a multiple approach we find that taking simultaneously into account several socioeconomic circumstances the associations with smoking tend to attenuate, particularly when education and occupational status are considered together, and when income is additionally considered.

In simultaneous analyses of multiple socioeconomic circumstances among men, instead of conventional socioeconomic indicators, material indicators including home ownership and economic satisfaction remained associated with smoking. However, there were gender differences and for women all socioeconomic circumstances except income and economic difficulties remained inversely associated with smoking.

Similar analyses for body weight showed that several socioeconomic indicators except household income and economic satisfaction are associated with obesity in women (Laaksonen et al 2004). Also childhood socioeconomic disadvantage was important to obesity even when current socioeconomic circumstances were taken into account. However, education and occupational class, in contrast, were unassociated with obesity net of other circumstances. These results suggest that obesity is likely to vary more by material resources than by conventional socioeconomic indicators.

Further studies have examined the socioeconomic patterning of problem drinking and its associations with mental health (Rahkonen et al 2005a) as well as work-family conflicts (Roos et al 2005). The socioeconomic patterning of drinking contrasts that of smoking, since upper classes drank more often than others, but problem drinking was more common among manual workers. Men more often than women reported problem drinking for each specific symptom: need for cutting down drinking, being criticised of drinking by others, having feelings of guilt and needing morning eye-opener drinks. Drinking differs from other health behaviours since it does not necessarily vary by socioeconomic circumstances. However, drinking problems are associated with having work-family conflicts among both women and men.

Associations between working conditions and health behaviours were relatively weak. Taking socioeconomic factors simultaneously into account further weakened these associations (Lallukka et al 2004).

Conclusions

A multitude of studies conducted in many different national contexts has identified socioeconomic, work and non-work related determinants across a broad range of subdomains of health, illness and health behaviours. These studies are able to suggest potential risk factors and risk groups within the population. However, these studies are unable to sufficiently add our understanding on the processes of how health inequalities and differences by key population groups are brought about. Thus, at the current stage of research more complex frameworks, such as simultaneous analysis of work and non-work related determinants of health, international comparisons between countries following different welfare state arrangements, are needed in order to be able to make progress in the research on the determinants of population health. In our studies we have made efforts along these lines. While the work is still ongoing a number of preliminary conclusions can be drawn.

First of all, conceptual work and elaboration of empirical approaches have identified multiple dimensions of socioeconomic circumstances. Nevertheless, further conceptual and theoretical analysis of the concept of socioeconomic position is needed to highlight the key dimensions and their interrelationships. Clarifying the conceptual background and approaches help develop more elaborate frameworks and indicators to be used in empirical studies.

Secondly, multi-dimensional studies using several past and present socioeconomic indicators have proven useful, and interrelationships and pathways in the socioeconomic production of health and health behaviours have preliminarily been identified. Our findings confirm the complexity of the socioeconomic production and also suggest that the socioeconomic patterning of health is likely to depend not only on the particular socioeconomic indicator, but also on the subdomain of health or health behaviour under study. There also are gender differences in the production of socioeconomic differences in health and health behaviours. Moreover, it is evident that the conventional dimensions of socioeconomic position, such as education, occupational class and income, are not necessarily the most powerful determinants found in

the multi-dimensional socioeconomic analysis of health and health behaviours. In contrast, also material circumstances in the past and in the present should be paid more attention in future research.

Thirdly, when employees are studied, as in our cohort, working conditions need to be taken into focus. However, working conditions vary by occupational position and accordingly socioeconomic factors are equally important. What is often neglected, however, is that employee health is determined not only by work related factors, but simultaneously also home and family related factors. Therefore we broadened our approaches to work-home interface and particularly conflicts between paid work and family life. Preliminary findings suggest that this new approach is important to mental as well as general and physical health, and also health behaviours. Among both women and men conflicts between work and family are associated with poor mental and physical health, and problem drinking. Future studies need to clarify the found associations, for example, how socioeconomic factors and work conditions might modify the findings.

Fourthly, international comparisons are needed to exceed the limits of explanations for the socioeconomic patterning of health and health behaviours related to particular national settings only. While we have started this work and found important similarities as well as dissimilarities between countries and genders, the next steps need to deepen the comparative research by introducing multi-dimensional socioeconomic approaches to comparative studies as well. So far we lack studies providing detailed explanations for socioeconomic inequalities in health in a comparative setting. We found in our studies comparing Finland, Britain and Japan health inequalities for all other groups except Japanese women. This calls for further investigation on the different welfare state and labour market arrangements. While morbidity and ill-health have often been studied in international comparisons, future studies need to include also health behaviours.

In sum, research on the patterning of health and health behaviours by socioeconomic position, work and non-work related determinants as well as gender and national context has already provided much

evidence, which however is mostly descriptive and still patchy. Thus, future research should strive for a more systematic picture and look for explanations illuminating interrelationships and pathways in the social production of health and health behaviours. This will require complex socioeconomic approaches to be further developed and applied in general and employee populations across different countries. Evidence on explanations and determinants of socioeconomic differences in health and health behaviours is not only challenging and innovative for scientific progress, but also provides key information which can be used for narrowing health inequalities and promoting health among disadvantaged groups and in the population as a whole.

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IMPROVEMENT IN PSYCHOSOCIAL WORK ENVIRONMENT TO IMPROVE HEALTH: MULTISAMPLE PROSPECTIVE STUDY

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Psychosocial work environment and health

Increasing concern is being expressed about the adverse effects that work stress may have on health. Common trends in modern work life include global competition, organizational changes such as downsizing and mergers, the growing proportion of the work force with various kinds of temporary work arrangements, and a growing number of dual-career families. Such trends and many other characteristics of modern work are likely to increase stress and influence health of employees. In this context, identifying factors affecting well-being, morbidity, work disability and mortality has special public health relevance in terms of disease prevention and health promotion.

Downsizing

Between the years 1991 and 1996, Finland faced a severe economic decline. Unemployment rose from 6.6% in 1991 to 16.6% in 1993, the worst year of the recession. Economic recovery started in 1995, but unemployment remained relatively high (14.6% in 1996). The number of Finnish local government personnel fell by 2.7% from 1991 to 1992, by 7.8% from 1992 to 1993, and by 2.7% from 1993 to 1994.

To examine whether downsizing is predictive of hard endpoints – such as risk of disability retirement or increased mortality – among employees who keep their jobs, we followed all male and female full-time municipal employees who had been in the service of the public sector in Finland before and after downsizing in 1991–1993. The data was derived from the Finnish *10-Town study*. The total working hours in the towns studied fell by 11.3% between 1991 and 1993. We calculated the percentage reduction in personnel by comparing person-years worked in each occupational group for each town in 1993 with the corresponding person-years in 1991. As in earlier studies, the participants were classified into the following groups: no downsizing (reductions in personnel <8%), minor downsizing (8–18%) and major downsizing (>18%).

In relation to work disability we found a linear association between the extent of downsizing and subsequent disability pensioning under 55 years of age (p=0.004). The overall rate for disability pensions per 1000 employees was 7.7 after no downsizing, 13.1 after minor downsizing and 14.9 after major downsizing. After adjustment for age, sex, occupational status, type of employment contract and town, employees who had experienced major downsizing had a 1.8-fold greater risk of being granted a disability pension when compared with the employees who had not experienced downsizing. Further adjustment for education had little effect on these results (HR after major downsizing 1.6, 95% CI 1.1 to 2.4; p for trend 0.030). There was no interaction between sex and downsizing or between occupational status and downsizing with respect to disability pensioning.

The two leading causes of disability were psychiatric diseases (30% of all disability pensions, 67 cases) and musculoskeletal disorders (29%, 64 cases). Other causes of disability were combined. Downsizing was not associated with disability pensioning due to psychiatric diseases. In contrast, the age and sex adjusted hazard ratios for musculoskeletal disorders and other causes were over twofold for those exposed to major downsizing. After further control for occupational status, type of employment and town these hazard ratios were still over 1.8.

We also found that the extent of downsizing was associated with cardiovascular deaths, but not with deaths from other causes. Cardiovascular mortality was 2.0 times (95% CI 1.0 to 3.9) higher after major downsizing than after no downsizing. Splitting the follow-up period into two halves showed a 5.1-fold (95% CI 1.4 to 19.3) increased cardiovascular mortality for major downsizing during the first four years after downsizing. The corresponding hazard ratio was 1.4 (95% CI 0.6 to 3.1) during the latter half of follow-up.

The specific strengths of these studies include a large sample size covering all public sector occupations, a long follow-up period, and reliable data on employment, early retirement and mortality from national registers. They represent a natural experiment on the effects of a changing psychosocial work environment with no accompanying change in material conditions. We used only objective data in the assessment of the constructs under study, eliminating the possibility of reporting bias. The same individuals were followed from before any rumour of downsizing, and after it. Confounding due to selection, socioeconomic status, area characteristics and stable unmeasured risk factors were found to be unlikely explanations of these results. In addition, only a very small minority was exposed to increased material disadvantage. Thus, we feel that the studies are able to surmount the two major criticisms of prior evidence on work stress and disease: that exposures and outcomes are often both substantively subjective, and that analyses are not controlled for the confounding effect of material disadvantage.

Our finding of a twofold risk of disability retirement below 55 years of age after downsizing link the problem of disability pensioning to increasingly common changes in modern work life. Permanent disability is a great burden, not only on the individual, but also on society. In this study, the annual incidence of disability pensions attributable to downsizing was 0.6 per 1000 workers. For the total of 260 000 full-time municipal employees being at work below 55 years of age in 1993 in Finland, this would imply 750 permanent disability pensions to be granted due to the adverse effects of downsizing during the subsequent

five years. As the costs of one such pension is about 168 500 euros, the estimated total costs from downsizing in terms of extra early disability retirements would have been 126 million euros for the pension institutions.

Identifying risk factors for cardiovascular mortality has also special public health relevance. We found that the association between downsizing and cardiovascular death was strongest in the years immediately after personnel reductions. No corresponding results were obtained for other causes of death. This time dependent effect pattern and outcome specificity suggest a causal interpretation of the association between downsizing and cardiovascular mortality, rather than a confounded association. Downsizing may act as a trigger for fatal cardiovascular disease and a prognostic factor in those with pre-existing cardiovascular disease.

Temporary employment: Is discontinuous employment a health risk?

There have been many changes in working life in Finland over the last couple of decades. Several different factors lie behind these changes such as the internationalization of the economy and the subsequent increase in competition, the rapid development of technology, and the increasing instability of funding for the welfare state. New organizational strategies have been developed in an attempt to respond to structural changes and changes in the economy. One form of flexibility has been the flexible use of labour. In unstable markets, companies try to adjust the number of employees to suit the prevailing economic situation. The percentage of so called atypical employment relationships or discontinuous work (fixed-term, part-time, agency employment) has increased in most industrialized countries since the beginning of the 1990s. In Finland, a total of 14 per cent of wage earners were employed on fixed-term contracts in 1990, and by 1997 this had risen to 18 per cent. By 2000 a total of 11 per cent of men and 18 per cent of women were working on fixed-term contracts. In the public sector the figures are higher: in 2002, 25 per cent of workers were on fixed-term contracts.

What does this kind of change mean to people who are engaged in discontinuous employment? Insecurity is characteristic of fixed-term employment, and it has been demonstrated that insecurity causes different kinds of health and welfare problems such as psychological symptoms, stress and a feeling that life cannot be controlled or anticipated. In the best circumstances, fixed-term employment acts as an intermediate stage for an employee as a springboard to a permanent job.

Our results on the health and welfare of hospital workers in fixed-term employment showed that those working in continuous fixed-term employment did not suffer health and welfare problems any more than permanent workers. In circumstances where fixed-term employment is either long or project-based in its nature, the employee's position may be fairly similar to that of a permanent employee. However, it should be noted that the follow-up times to date of the questionnaires has been short and the respondents probably consisted of 'survivors'.

We also found that a strategy for coping used by those in fixed-term employment seems to be 'attendance'; absenteeism due to sickness was 20–30% less compared with permanent employees even when they felt their wellbeing to be in a weakened state. Thus, it is possible that employees on fixed-term contracts do not always dare to take sick leave, even when they need to be off sick. This possibility is further supported by our finding that organisational downsizing associated with increased sickness absence among permanent personnel, but not among temporary employees. Employees with temporary job contracts were the most likely to lose their job. For them, high job insecurity may increase the likelihood attending work whilst ill, a phenomenon known as sickness presenteeism. It is possible that morbidity among temporary employees increased after major downsizing, but did not affect absence rates due to increased sickness presenteeism.

It was also observed in the hospital study that of the employees on fixed-term contracts, men and highly educated employees were made permanent more rapidly. Good psychological and physical wellbeing together with work satisfaction furthered being made permanent.

Therefore, those remaining in fixed-term employment are often women, people with less education as well as those whose health is poorer.

Because those employed on fixed-term contracts often have more financial problems, fixed-term employment can often create a vicious circle of exclusion. A person whose state of health is deficient may find themselves in greater danger of being excluded. In a situation like this, the compounded effect of an individual's labour market position, health, lifestyle and other factors (e.g. sex and educational level) may create a path where a failing state of health, deteriorating lifestyle and weakening labour market position may gradually result in exclusion. A person may end up completely excluded from working life or in a permanent state of work insecurity where the risk of unemployment increases and health risks accumulate.

An observation made in *the 10-Town study* pointed to just this type of vicious circle of exclusion. We found that mortality among those who had been engaged in fixed-term employment in the 1990s was higher than those who had been in permanent employment. The cause of death among those in fixed-term employment was mainly linked to suicide and accidents. The highest rate of mortality was, however, among individuals who had been placed in subsidized employment, ie. long-term unemployed people who obtained the 6–10-month subsidised work contracts offered by municipalities.

Nevertheless, it is still not known how the chain of fixed-term employment that continues for years will effect a person's health and wellbeing. Another unknown is what the accumulation of different risks on the same group of people, e.g. financial difficulties, single parenthood, a low educational level, as well as insecure, discontinuous employment and periods of unemployment, will mean if the situation continues for a long period of time.

Organisational justice

The pursuit of justice is assumed to be a fundamental aspect of any social organisation, including workplaces. The term 'organisational

justice' refers to the extent to which employees are treated with justice at their workplace. Organisational justice involves a procedural component and a relational component. The former indicates whether decision-making procedures include input from affected parties, are consistently applied, suppress bias, are accurate, are correctable and are ethical. The latter element refers to the polite and considerate treatment of individuals by supervisors. Although the associations of organisational justice with work motivation, job satisfaction and work commitment have been shown, little has been known about the potential impact of organisational justice on employee health.

Previous research suggests that low organisational justice and unfair treatment are related to factors that influence susceptibility to illness. A limitation in the existing evidence has been its reliance on cross-sectional data. Such data cannot rule out the alternative possibility that health problems may increase the likelihood of being treated unfairly or feelings of unjustice or both. In these cases, organisational justice would represent a consequence of health rather than a predictor of health (reverse causality hypothesis). Confounding factors may also underlie the association: one may suspect that organisational justice is only a marker for other psychosocial factors that influence health (eg job control, workload, social support and hostility) and uncertainty remains whether organisational justice predicts health independently of behavioural and biological risk factors.

As a part of an on-going project "*Work and health in Finnish hospital personnel*", we longitudinally investigated the association between organisational justice and the health of employees. Data on psychosocial characteristics of the work environment, behavioural, and biological markers allowed us to explore whether organisational justice independently predicts health.

This was apparently the first longitudinal study to show that the extent to which employees are treated with justice predicts their health. The association between low organisational justice and increasing health problems was observable across all the health outcomes studied, among men and women representing not only medical professions,

but also administrative and maintenance jobs, and in the initially healthy subcohorts. Although not very large, the size of the effect was comparable to those related to established psychosocial determinants of morbidity such as job control, overload and hostility. No evidence was found to support the reverse causality hypothesis or that the association between organisational justice and health is attributable to relations between other psychosocial factors, behavioural and biological variables, and health.

Low procedural and relational justice equally increased the likelihood of medically certified sickness absence but for procedural justice there was an interaction with socioeconomic status. Differences in health effects between income groups suggest that procedural justice may have more salient meanings for members of highly ranked occupations close to management than for employees in lower ranking occupations. Minor psychiatric morbidity and self-rated health status were more strongly predicted by the procedural than the relational component of justice. This is in line with earlier cross-sectional findings and suggests that a low-justice work environment characterised by unjust organisational policies, practices and procedures is a greater risk to health than unfair treatment from an immediate supervisor.

Conclusions

Organizational downsizing and the increasing percentage of non-permanent employment relationships are examples of common changes in modern work life, which have potentially adverse effects on health. Policy makers, employers, occupational health professionals, union representatives and employees should recognise these risks. Although not always inevitable, such changes are likely in the foreseeable future.

The immediate financial advantages of such changes need also to be considered in relation to the costs resulting from them. For example, our evidence on downsizing suggests that such changes may cause great burden to society in terms of increased disability pensions and lost years of work life.

In this context, identification of potentially modifiable factors, which increase resilience and decrease vulnerability among employees is important. Organisational justice at work may be an example of a crucial and independent aspect of the psychosocial environment influencing morbidity in working populations. The traditional focus on work characteristics, social support and personality has been an important first step, but broadening the view to managerial procedures and treatment of individuals in organisations seems now to be important. Such a perspective may not only increase our understanding of psychosocial risks but also suggests new priorities for strategies for promotion of health and wellbeing at workplaces.

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PARTICIPATORY ERGONOMIC INTERVENTION AT WORK PLACE: RANDOMIZED CONTROLLED TRIAL AND ETHNOGRAPHIC STUDY

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Ergonomic intervention in kitchen work

In the beginning of 2002 we started a randomized controlled trial to study the effectiveness of ergonomic intervention in promoting the musculoskeletal health and general well being of kitchen workers. We chose kitchen work as our target, because the work involves exposure to many physical and psychosocial stressors and kitchen workers are known to have much musculoskeletal disorders. Data collection is still under way and therefore the results of the effectiveness cannot be presented. In this report the study program and the intervention process are described as well as the realization of interventions in kitchens and the evaluation of the intervention process by the kitchen workers.

A part of the project was an ethnographic study. This study aimed at describing the positive and negative features of kitchen work and work environment as perceived by people in different occupations and positions in kitchens. The significance of cultural features in promoting or hindering the intervention process was evaluated. The main results of the ethnographic study are presented.

Process of the intervention study

We launched the study in four big cities. The study started in Vantaa and Turku in the spring 2002 and in Espoo and Tampere in the spring 2003. Our research program is presented in figure 1. By the end of 2004 the intervention phase of the study was completed. The collection of questionnaire data will continue until the end of 2005.

We recruited 119 municipal kitchens with 540 employees into our study (62% of the eligible kitchens). Of the kitchens, 85 were in schools, 21 in kindergartens, 11 in homes for senior citizens and 2 in other institutions. Half of the kitchens were randomly allocated to the intervention and half to the control group. We assessed the successfulness of randomization by comparing the results of the baseline questionnaire between the two groups. Randomization proved to have been very successful.

The intervention was executed applying a participatory approach based on group work. The kitchen workers were guided to identify strenuous work tasks and processes and to seek for solutions to decrease physical and mental load in their work. A researcher trained in ergonomics gave support in this process. The intervention process is presented in figure 2.

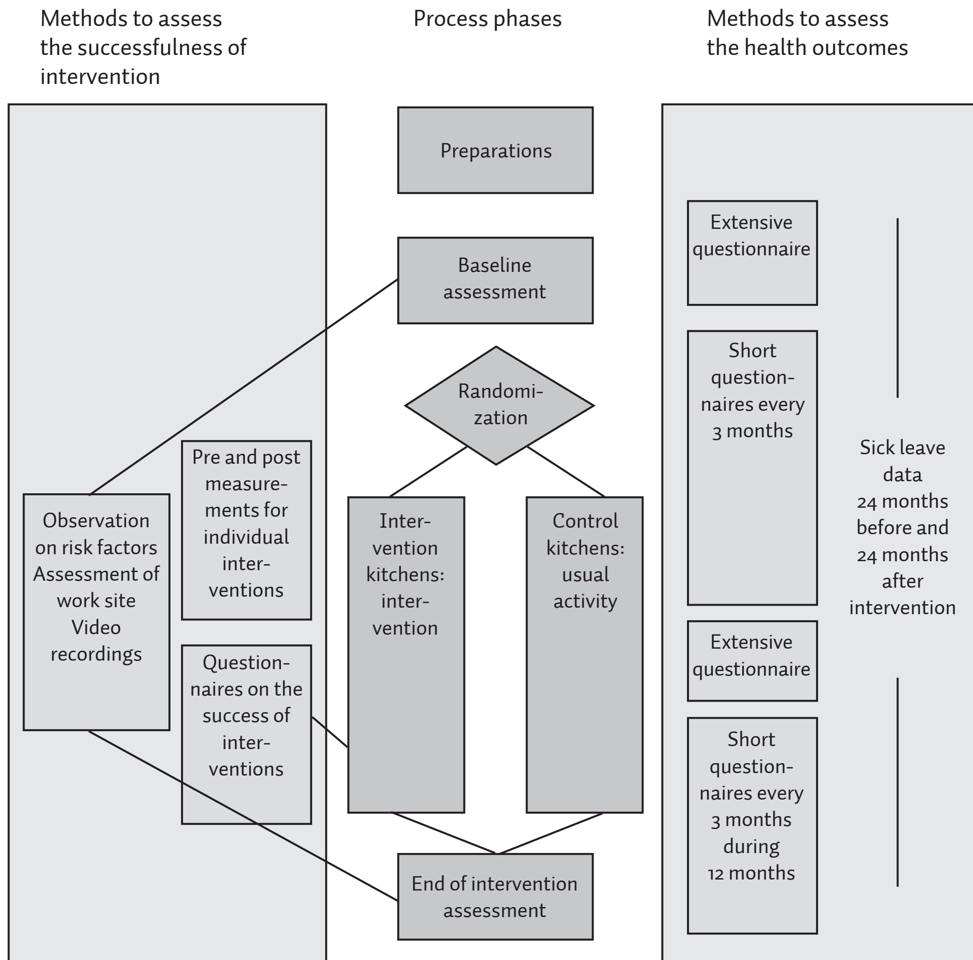

***Figure 1**. Study program.*

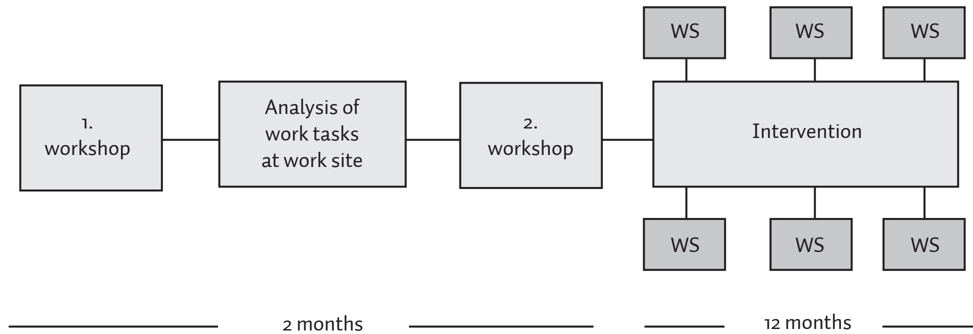

***Figure 2**. Intervention process.*

Interventions to improve ergonomics

The intervention phase was executed in series of eight kitchens. In each series, all personnel of the four intervention kitchens participated in group work in special workshops lead by the ergonomist. The kitchen workers were taught the basic principles of ergonomics, they analyzed their work tasks and processes and planned interventions. The interventions were targeted to work tasks which were performed by as many of the workers as possible, were physically strenuous and were repeatedly performed every week, or which involved a risk of sudden overloading of the worker. Altogether more than 400 interventions had been carried out, which the ergonomists evaluated as significant with regard to the load on the musculoskeletal system or occupational safety. Most interventions had been directed to dish washing, and preparing and serving the food. The targets of the interventions are presented in Table 1.

Table 1*. Interventions by target.*

Target	Number
Machines, equipment , tools	122
Lay out, furniture	68
Work organization, work methods, work habits	196
Materials	23
Work environment, safety	38
Other	15

Workers' evaluation of the intervention

The kitchen workers evaluated the successfulness of the intervention by means of a questionnaire at the end of the intervention phase in each kitchen. The questionnaire contained eight questions: "How do you evaluate the following: 1. Practical arrangements; 2. Information

transfer during the intervention; 3. Learning during the intervention; 4. Workshop activities; 5. Collaboration between kitchens; 6. Changes in the kitchens; 7. Professional skills of the researchers; 8. Support from the town administration. The results are presented in Figure 3. To a large extent the kitchen workers were satisfied with the intervention. Least satisfied they were with collaboration between kitchens and support from the administration.

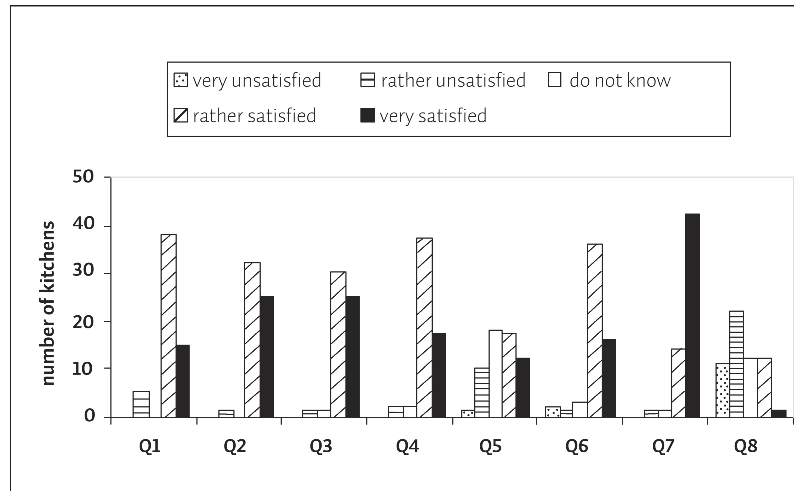

***Figure 3**. Satisfaction with the intervention.*

Ethnographic culture analysis of work in kitchens

Aspects that protect health and working capacity in kitchen work are the following: the employees feel they are in a right career, they like their job, customers, members of their work community and their workplace in general. They also consider important that they are part of a larger entity, not only part of the kitchen. Thus the personnel identify and commit themselves as employees to the day-care centre or school and their employer's and their own goals are parallel (29%). If the employees feel that they are not so much part of the larger entity, they commit only to their own job, closest colleagues and the kitchen. Then the relationships

of the kitchen personnel to their workplace are distant (isolation by oneself, isolation by others, introversion). They decrease co-operation and cause conflicts between personnel groups (61%).

Employment security was considered to be important. Continuity and a permanent labour contract (59%) compensated for shortcomings in physical working conditions and utensils as well as in low pay. Low salary that does not correspond to job requirements and workload brings about most dissatisfaction (96%). Happy and open work community with a good sense of humour was considered to be essential from the point of view of mental well-being and enjoyment of work. Experiences of well-being at work are affected both positively and negatively by a reciprocal division of tasks and responsibilities among the kitchen personnel.

In functional kitchens with a positive atmosphere (83%) it was emphasized that everybody does everything and participates in all phases of the work. No one picks or chooses tasks nor refuses to perform them. The opposite of that are the kitchens where tasks are divided in a highly old-fashioned and traditional manner. The division is based on hierarchy in which, pointedly presented, "the cooker cooks", in other words makes the main course and the others clean after the cooker and perform the other dullest and hardest and professionally less demanding tasks. The employees felt that their work was dull if they could not use their know-how and if their work was under burdening (44%) compared with their education and skills.

In nearly all kitchens the central burdening factor was excessive workload and a pressing pace of work. The number of the personnel is felt to be too small in most kitchens. There are a few kitchens where hurry is not a burdening factor. To the contrary, a fast pace of work and numerous tasks are felt to be meaningful and part of the work. Too slow a pace would be felt to be a negative thing. In the work community in question there prevails a positive, open, discussing, happy and functional atmosphere in which employees have become friends on a personal level. The experience of burdening hurry can be related to a troubled and tense atmosphere (inflamed relationships, experiences of bullying and inappropriate treatment).

In a hierarchical and supervisor-centred mode of action too many responsibilities were left on the shoulders of the supervisors either of their own will or because the employees were passive. This, on the other hand, led to a situation in the development work in which employees went along with the supervisors' opinions and suggestions. On the other hand, the supervisors' workload increased when they were left with too much responsibility and too many tasks. The former decreased the employees' motivation and commitment because they could not participate and influence. This led to a situation in which the employees' enthusiasm decreased and they became passive. Among the kitchens there were also some in which the development of kitchen ergonomics was collectively attended to, by jointly agreeing about the division of tasks and rules already prevailing in the kitchen. In the workshops, these kitchens seemed to be the most enthusiastic, producing, active and cheerful work communities.

According to the results of the questionnaire, the degree of contentment of the kitchen personnel with possibilities to influence their own work (28%) and work community (33%) is low. This showed in qualitative data as experiences of difficulties in getting sufficient and appropriate appliances, machines, utensils as well as repairs and renovations regarding working conditions and physical shortcomings. Regarding those, the employees need to rely on one another in the kitchens. For example, in the development of kitchen ergonomy, the biggest problems were felt to be few possibilities to have influence and problems in co-operation in a facility centre operating under a technical department regarding its male employees.

A meeting arranged by the researcher in connection with the participatory ergonomy intervention was considered to be extremely beneficial among both the kitchen personnel and the management of food-producing services. Many everyday flaws and problems related to transport and deliveries causing difficulties in the kitchens' daily work were brought up and entered into the contract. These flaws and problems had often been brought up by the kitchen personnel, but the transport business had not taken them seriously. It was only the intervention of the researcher that led to a positive outcome.

This kind of participatory ergonomic intervention was not a familiar way for the kitchen personnel to develop their own work and work processes. The development work was mainly successful, however, which was furthered by the fact that the participatory method used was motivating and inspiring to the participants. It enabled the employees to make choices concerning themselves and the entire kitchen personnel about the important factors and matters which eventually made their work and shared work processes more sensible and easier and which decreased each and everyone's workload. In a central role in the success of the participatory development project was the inspiring and motivating attitude of the researcher as well as the appreciative attitude of the kitchen personnel.

In some kitchens the development project did not become a shared endeavour; the development was led and authority exercised by the supervisor – the cooker or the head of food-producing services. The supervisor either took the lead or it was handed over by the employees. This mode of action was natural, because it followed the models of authority, responsibility and division of tasks.

Another mode of development was the model based on collective responsibility and shared development and resembles the principle "everybody does everything". Characteristics of this model are the jointly agreed division of tasks, common rules and joint responsibility for the functioning of the kitchen. In supervisor-led kitchens the targets of development became things that the supervisors thought were important and mainly concerned the work processes of others – not their own. Among the personnel this decreased motivation and caused passivity and disappointment.

The most central and important obstacles to the development of kitchen ergonomics were some people's strong resistance to change, passivity as well as an outright refusal to make necessary, jointly accepted changes in their work. At its worst, it was about resisting the instructions and orders of the supervisor, passive resistance and negligence of work. There was an attempt to solve this problem by top management and the researcher, with no success, however. Because of the resistance of

one individual, hardly any reforms were made. The result reveals the power that is embedded in routines, negative attitudes and in a complete commitment to one's own work. It can be explained and understood through a following notion: when a person is strongly attached to the work routines and modes of action, which she feels to be safe, she also feels in control of her own work. Change represents an external threat to one's own work and job security. In the background often lies an instrumental work orientation: work is committed to only because of its external rewards like wages. Work itself or the work community is not the source of inner motivation.

The participatory ergonomics intervention was for the kitchen personnel a "wake-up call" regarding ergonomics. With the kitchen personnel's own words, they developed an ergonomic eye through which they started to look at their own and the others' work. During the project, many things emerged which would not have been thought about or noticed without the project. Very or fairly positive the effects of the project were felt to be on individual methods of work (92%), possibilities to influence (83%), physical burdening (68%) and motivation (64%). The most central support was given by the project researchers (72%), the kitchen supervisor (70%) and colleagues (68%).

The kitchen personnel expressed a wish that the representatives of management and administration would have participated more often and more actively in the workshops and development workshops. In this way they would have had an excellent opportunity to hear more about the daily life, work and development needs of the kitchens and get acquainted with the employees. However, despite their willingness and interest, management was so busy taking care of their own tasks that they were not able to participate much.

Conclusions

We could not present results of the effectiveness of the ergonomic intervention on physical or psychosocial stressors or on musculoskeletal health, because the data collection has not been completed yet.

Randomization was successful. The participatory intervention process supported the kitchen workers to keep up developing ergonomics in the kitchens throughout the intervention phase that lasted for a year. A lot of interventions were carried out in the kitchens. Response rates to the 3-monthly questionnaires have been excellent in both the intervention and control kitchens. All this indicates that scientifically valid results of the effectiveness can be expected. First results will be published during 2006. The results will be of importance in planning ergonomic intervention in kitchen work but also in general.

The experience gained in the project will be collected to a good practice guideline for kitchen work.

PART IV

CHILDREN AND ADOLESCENTS

SCHOOL CHILDREN'S PERCEIVED HEALTH AND HEALTH BEHAVIOUR IN THE CONTEXT OF FAMILY AND SCHOOL

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Have the needs for health promotion changed among school-aged children?

This subproject of the Health promotion research programme investigated school children's perceived health and health behaviours using the survey data from an international, WHO-coordinated HBSC study (Health Behaviour in School-aged Children). This project also explored qualitatively school children's and their parents' perceptions of health and decision-making related to health in the family. The following results are mostly examples from the international report of the HBSC study and on the national HBSC study 20 years anniversary publication.

Study data

Majority of the research data comprised of the nationally representative data collected among 11-, 13-, and 15-year-old school children for the

HBSC-Study since 1984. The data have been gathered at four-year intervals using a standardised questionnaire since 1986. International HBSC data in 2002 consists of 35 countries. (Roberts et al 2004, Villberg & Tynjälä 2004.) The qualitative data was collected in Finland in schools (Puusniekka 2004) and in homes by interviewing adolescents and their parents (Halmesmäki 2004).

Health as a resource

Most of the young people in HBSC study rate their health as good or excellent, do not have multiple health complaints and are satisfied with their lives. Nonetheless adolescence could be described as a period of increasing health inequality. Nonetheless, a large minority of young people hold the opposite view of their health. It seems that adolescence could be described as a period of increasing health inequality. When analysing self-rated health and subjective health complaints in adolescents, gender and country or region can be identified as important sources of health inequalities: with an increasing risk of poor subjective health in girls. Baltic States (excluding Estonia) and the eastern countries in the European Region tend to have higher rates of poorer health, which tentatively indicates that social and structural conditions have much to offer explaining such differences. According to these research findings an important part of young people may be at increasing risk of being unable to cope with the life challenges that young people face in peer relations, academic performance and the development of identity. (Torsheim et al 2004.)

According to the data in HBSC study of 1984–2002, the majority of schoolchildren had a positive assessment of their health. From 1984 to 2002, increasing numbers of 11 to 15-year-old girls and boys considered their health to be excellent. Self-rated health was different across genders, with boys having more generally a positive assessment of their health than girls. Despite increased positive health assessments, a number of symptoms were quite commonly reported by adolescents during the entire period of study. Older schoolchildren reported symptoms more commonly than younger ones. Also, gender differences were more

pronounced in the older age groups, with 15-year-old girls experiencing clearly more symptoms than boys. The most marked increase among the symptoms examined was for neck and shoulder ache. In the oldest age group, one half of girls and approximately one third of boys reported that they experienced neck and shoulder ache weekly. Such gender differentiation of symptoms was also observed in experiencing multiple symptoms simultaneously. Experiencing multiple symptoms weekly became more common from 1984 to 2002, particularly with girls in the oldest age group. No equally clear increase occurred in symptoms experienced daily. In 2002 approximately one tenth of the girls in the two oldest age groups reported experiencing at least three separate symptoms almost daily (with a symptom index constructed of 14 separate symptoms). With boys, the corresponding percentage was 4%. These adolescents who experience symptoms frequently are likely to constitute the group that overtaxes health services in schools, local health centres and specialised care. (Välimaa 2004a.)

Obesogenic environment challenges health promotion

Obesity is a major public health concern, described by WHO as "a global epidemic" due to its high and increasing prevalence. The prevalence of overweight differed greatly between countries. Overweight was most common in USA where one third of boys and one fifth of girls belong to that group. This gender difference remained stable across almost all HBSC countries and regions. The proportions of young people reporting dissatisfaction with their body (too slim or too fat) differed greatly between countries girls being most often worried that they were too fat. Girls were more likely to report engaging in weight control behaviour than boys across all countries and regions. (Mulvihill et al 2004.)

According to the data of the HBSC study 1984–2002, the average body mass index rose in the 11, 13 and 15-year-old groups, for both boys and girls. With both 13 and 15-year-old girls and boys, obesity (BMI ≥ 95%) increased during the latter half of the 1990's more noticeably than overweight (BMI ≥ 85%) did. In contrast, the limit

for underweight (BMI ≤ 15%) remained quite stable during the entire study period, from 1984 to 2002. According to the international limits of obesity, defined by Cole et al. (2000), the percentage of obese adolescents increased by 1–3%, from 1984 to 2002.

The percentage of 13 and 15-year-old girls who were dieting was at least doubled from 1984 to 2002. In the 2002 survey, 15% of 15-year-old girls reported that they were on a diet. In addition, approximately one third of 13 and 15-year-old girls considered that they needed to be on a diet but were not dieting at the time of the survey in 2002. Dieting also became somewhat more common with boys during the study period. In contrast to girls, the majority of boys on a diet were found in the youngest age group. In 2002, 7% of 11-year-old boys were on a diet. (Välimaa & Ojala 2004.) The girls' weight management practices were mostly healthy, but vomiting and fasting were also reported. The physically active girls were more likely to control their weight by exercising, eating less sweets and fat, drinking less soft drinks and eating more fruit and/or vegetables than the physically passive girls who, instead, appeared to smoke more in order to control their weight. (Ojala et al 2003) In addition to increased obesity and dieting, the results of this study also revealed some more positive prospects: the percentages of adolescents, both boys and girls, who felt that they were of the right size increased slightly, from 1998 to 2002, in all age groups. (Välimaa & Ojala 2004.)

The avoidance of excessive weight gain in young people would prevent the development of obesity, which has implications for future health. It is therefore vital to develop multifaceted, effective and evidence based programmes that support lifestyle changes for the prevention and treatment of overweight and obesity in young people. (Välimaa & Ojala 2004.)

Skipped meals and rarely vegetables and fruit

Adolescence is a time when the consumption of a diet of high nutritional quality is particularly important. It's also a time when weakening influence of the family and increasing influence of peers on food choice

occurs. In addition, children and adolescents are influenced by extensive marketing and advertising and often wish to obtain perfect body shape. Young people who develop healthy eating habits early in life are more likely to maintain them in maturity and to have reduced risk of diet-related chronic diseases, such as cardiovascular diseases, cancer, non-insulin-dependent diabetes mellitus and osteoporosis.

A significant number of young people do not follow current nutritional advice. Fruit and vegetable consumption across HBSC sample was relatively low. Girls in general reported eating fruit and vegetables more often than boys, and younger more often than older school-children. Unlike fruit and vegetable consumption, more boys than girls drank soft drinks every day in most survey participants and for most age groups, with very few exceptions. The age and gender differences in the consumption of sweets and chocolate were negligible and high consumption of sweets and soft drinks was common among adolescents. However, Finland was among the countries where the consumption of soft drinks and sweets was lowest in all age groups. Through the international data, boys have breakfast more often than girls and this gender difference becomes more pronounced with age. The higher proportion of girls who reported not eating breakfast might be explained by the relatively high percentage of girls who are trying to lose their body weight. (Vereecken et al 2004, Ojala et al 2003, 2004).

The changes in dietary habits shared by both sexes in Finland were decreased consumption of vegetables and fruit as well as that of milk, from 1986 to 2002. Daily consumption of hamburgers, hot dogs, pizza and potato crisps was rare. Such foods were, however, familiar to adolescents and eating them at least weekly became more common from 1994 onward. (Ojala 2004.)

Conventional eating pattern of three main meals daily is not prevailing among Finnish adolescents any more. This may have implications for the dietary intakes and increased obesity, even though the data from this study did not support an association between the regularity of meal patterns and adolescents' overweight status. Exiguous alcohol consumption and smoking, and plans for higher education after compulsory school were

evidently associated with regular meal patterns. Changes within the distribution of weekly family meals and mother's monitoring appeared to account for a considerable part of the more regular meal patterns among adolescents. (Ojala et al, submitted.)

The findings in HBSC data reflect a substantial variation in food consumption across countries and regions, and a number of factors play a role in these differences: cultural habits and norms, availability, pricing, advertising and national policies that regulate or support food-related issues. Despite the increased focus in many countries over the last decade on promoting fruit and vegetable consumption, only a minor group of young people ate fruit every day. Notable are also the gender and age differences.

The cross-national data point to the conclusion that programmes are needed to improve the eating habits of the adolescent population. The development of effective strategies, however, requires an understanding of adolescent eating behaviour and the factors that influence it. A recent review (Story et al 2002) established a model that conceptualizes adolescent eating behaviour as a complex function of interacting influences at the individual (such as biological and psychological), social (such as family and peers), physical environment (such as school and fast-food outlets) and macro-system or societal (such as mass media and social and cultural norms) levels. Young people should receive consistent messages on healthy eating in multiple settings and from a variety of sources, including home, schools, medical settings, community organizations, and the mass media and government agencies. Further, the image of healthy food habits could be improved and tasty, convenient and less expensive foods could be made more readily available.

It is time for sleep education at school

In the 1980's, there were very few changes in sleeping habits, such as bedtime and length of sleep. Between 1990 and 1998, the percentage of those who went to bed relatively late increased and sleeping time during the school week decreased (Tynjälä & Välimaa 2000, Tynjälä et al 2002).

In turn, between 1998 and 2002, the percentage of those staying up late clearly decreased and adolescents slept somewhat longer during nights preceding school days. On weekends and off days, adolescents slept from one hour to nearly two hours longer than during nights preceding school days. Staying up late and sleeping little were more typical of 15-year-olds than 13-year-olds. There were no significant differences in sleeping habits between the sexes.

The percentage of those suffering from difficulties in falling asleep almost daily varied between three and 12 percent. Changes from 1984 to 2002 were generally minor, with the exception of 11-year-olds, whose percentage was halved. Between 1994 and 2002, the percentage of those waking up almost every night varied from two to seven percent. With 13 and 15-year-old girls, this percentage was doubled from 1994 to 2002. There were generally only minor differences between the sexes and the age groups in difficulties in falling asleep or nocturnal awaking in different study years. In the study of 2002, in the age group of 15-year-olds, however, girls had both of the above sleep disorders twice as commonly as boys did. Nightly sleep latency did not vary with boys in 1990, 1998 and 2002. Contrastingly, girls – especially 13-year-olds – showed differences in sleep latency between the study years and, in the data of 2002, girls turned out to be poorer in falling asleep than boys.

No clear trend emerged in sleepiness experienced on school day mornings between 1984 and 1990. In contrast, there was a sharp increase of sleepiness experienced on at least four school day mornings per week from 1990 to 1998 in all subgroups (Tynjälä & Välimaa 2000, Tynjälä et al 2002). However, this percentage decreased between 1998 and 2002, with the exception of 13 and 15-year-old girls. Differences between the sexes were generally minor in all study years, and morning sleepiness was clearly more common with 13 and 15-year-olds, compared to 11-year-olds.

The importance of sufficient sleep and regular sleep rhythm must be constantly publicised to parents of schoolchildren and all who work with adolescents. Families should consider how they organize their time so that even after all chores and hobbies there would be enough time

for the family members for relaxation, leisure and sleep. In the health education at schools, sufficient lesson time should be allocated for the subject of sleep and rest and, especially, for their significance for pupils' well being.

School physical education boosting leisure time physical activity

According to the international recommendations on health-enhancing physical activity, all adolescents should be physically active for at least one hour each day. That hour can consist of many shorter periods of time during which the heart rate and the respiratory frequency increase. (Department of Health 2004.)

The HBSC study revealed that less than half of the adolescents aged 11–15 years were according to the recommendations adequately physically active in the participating countries. Less than one quarter of Finnish 15-year-old boys and girls were physically active at least an hour each day. (Roberts et al. 2004.) However, leisure time physical exercise among the Finnish adolescents became more common between 1986 and 2002. The proportion of those adolescents who did vigorous physical exercises (physical activity involving sweating or getting out of breath) four times a week or more in their free time increased in all age groups. In 2002, slightly more than 40 per cent of the 15-year-olds, almost a half of the 13-year-olds and more than a half of the 11-year-olds did vigorous physical exercise four times or more a week outside the school hours. (Vuori et al 2004a.) The adolescents who had long-term illnesses and participated in inclusive teaching were physically as active as other young people at the same age (Rintala et al 2004).

To some extent inconsistent findings with the results of the studies on schoolchildren's physical fitness was gained relating to the perceived physical fitness. Adolescents except 15-year-old boys perceived their physical fitness as good or excellent more commonly in 2002 than in earlier study years. Perceiving physical fitness as good or excellent becomes rarer along with the age. (Vuori et al 2004a.)

There are no national recommendations on health-enhancing physical activity levels of children and adolescents, which makes it difficult to use concrete amounts or thresholds in physical activity planning. These concrete recommendations on health-enhancing physical activity should also be developed for children and adolescents. The primary goals for both school physical education and free time physical activity is the creation and the maintenance of lifelong physical activity. Strengthening the role of school physical education can assist in the accomplishment of the primary goal.

Smoking and the use of intoxicants are constant challenges

The smoking experiences and daily smoking become less common in boys and 11-year-old girls in Finland during 1984–1998. In 1990–1998 the smoking experiments became more common in 15-year-old girls, but the proportion was smaller in 2002 than in 1998. The daily smoking of the 15-year-olds was slightly more common in 2002 than in 1998. (Vuori et al 2004b.) In Finland, more than one in five was a daily smoker in the oldest age group in 2002, which is a significantly large proportion in the international comparisons (Godeau et al 2004).

Monthly alcohol drinking became less common in 11 and 13-year-old boys since 1994. However, in 15-year-old boys and 13 and -15-year-old girls the monthly alcohol drinking became more common until 1998, but was slightly less common in 2002 than in the preceding study year. One in twenty among the 11-year-olds, one quarter of the 13-year-olds and a half of the 15-year olds drank alcohol once a month or more often in 2002. The proportion of the Finnish 15-year-old boys who had been drunk at least four times during their life decreased significantly in 1990–2002. However, the corresponding proportion of the girls of the same age increased since 1990. One third of the 15-year-olds reported being drunk four times or more in 2002. (Vuori et al 2004b.)

Four per cent of the Finnish 13-year-old and ten per cent of 15-year-old adolescents had ever used cannabis in their life in 2002 (Vuori

et al 2004b). Among the countries participating in the HBSC study the average proportion of the 15-year-old adolescents with cannabis experiments was more than twice the corresponding Finnish figure (ter Bogt et al 2004).

The changes in the adolescents' smoking and the use of intoxicants are on the one hand promising but on the other hand alarming. The consequences of the definitions of the alcohol policies of our time may be realised in the coming years. Dispassionate and factual health education related to tobacco and intoxicants needs support also from the other policy fields.

Conclusions

The study findings have been used in the development of health promotion policies, programmes and practices across WHO European Region. The extensive study material provides both baseline data (International report) and data for guiding the development of the health for all targets. The findings have also raised issues of national concern, which have been widely utilised as a material in teacher training and continuing education (Välimaa 2004b, 2005). Results from national HBSC study and from qualitative research suggest also that supporting families, e.g. strengthening parenting skills, especially social and emotional skills that help communication with growing children, is crucial when promoting adolescents' health (Currie et al 2004, Halmesmäki et al 2004).

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HEALTH, WELL-BEING AND CHILDREN'S AGENCY

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In this research children's health and well-being is conceptualized and studied as a phenomenon that is both agentic and relational: health and well-being are seen to be interconnected with both children's individual *agency* and with the *social relations* within which they act in the daily arenas of their on-going social life. Health and well-being are generated daily in and through children's activities, and as their results, and these activities always take place in relation to the social and material environment in which children live. The project therefore distances itself from an individualist, medical definition of health and well-being, and attempts to develop a more social, relational concept of how health and well-being are generated by social actors in the processes of their daily lives, as well as methods for researching specifically children.

In line with this methodology, the research focuses on

- children's own agency (activities),
- the action resources (or 'capitals') that are in their disposition in these activities, as well as

- the material and social factors that may either restrict or allow and enable children in taking up action in the arenas (or 'fields') of their daily life. (See Bourdieu 1986; Bourdieu 1999.)

As children's bodily and mental condition are understood to be generated ('constructed') relationally, the basic unit of our analysis is the social relations which children take up and act in, or are prevented from doing so. The communal and structural characteristics of the environment in which children daily act are therefore of paramount importance for understanding health-generating processes.

More precisely, the aims of the project was to explore

- the social and cultural resources that are essential for the development of children's health and well-being;
- the ways in which children's competencies (which we conceptualize as forms of 'capital') are permitted, supported and developed – or prevented - in their daily activities in a number of social environments;
- the prerequisites of developing bodily competencies ('bodily capital') and using them, as well as the on-going control of children's bodily lives, the discourses and conventions of control and their relation to the (implicit) 'body regimes' in one of children's daily arenas (day care centre)
- the specific resources that children are provided with (or prevented from) in and by their daily living and school environments for participating in the planning and decision-making concerning their own residential area.

The research project consists of three sub-projects. Two of them are doctoral dissertation projects (Johanna Kiili: *Arenas for children's participation* and Anu Kuukka: *Children's bodily lives in the context of a day care centre*); the third sub-project extends work of the researcher's previously accomplished doctoral dissertation (Anja-Riitta Lehtinen: *Children's agency, health and well-being in a day care centre*). The research subjects were children aged 5–12 years. The data were collected in two day care centres and two primary schools in different residential areas in Jyväskylä, using ethnographic field methods.

Social fields, action resources and children's agency in the construction of the quality of everyday life

Each sub-project shares with others a agentic-relational methodology as well as a set of central concepts to both work with and develop; these are (1) social field, (2) action resources (or 'capitals'), and (3) children's agency. The brief presentation below of the rich analytic and descriptive knowledge that the project has so far produced is structured according to these three interconnected concepts.

Social field. Day care centre, school and surrounding residential area are conceptualized as social fields. Both their structural and contextual characteristics are interconnected with the construction of children's health and well-being. Day care centres are social fields that are mostly provided for children by adults and children participate mostly by the rules given to them by adults. In the study concerning school and residential area is aimed at investigating a "children's parliament" activity which was brought into the school as a completely new concept and was created by children themselves. When participating in social fields such as these, children have different action resources, which also become topical and useful in different ways in the different fields.

The agentic-relational approach defines a focus on the dynamic of the social field in questions. It is normal for the social field created inside a day care centre that processes of both connection and division develop. These processes include

(1) the process of developing particular social relations: a set of social statuses and systems of preference are created, social networks and relations of reliability constructed;
(2) increase in the understanding of the activity culture of the social field, and
(3) increase in the competent utilization of different action resources in the social field.

In these processes children develop particular social statuses for themselves and for others, as well as functioning social orders for different

situations. Children's participation in or their marginalization/exclusion from these processes lays the ground for the quality of their daily lives. (Lehtinen 2005a.)

A characteristic of a day care centre as a social field, supportive of children's health and well-being, is that the rules concerning activities and education in the day care centre have been negotiated between adult staff and children. Also, the activities are based on pedagogical concepts which respect children and their agency. Furthermore, the norms, regulations and expectations concerning activities are well-defined and negotiated. On the level of interaction, the forms in which adults view and control children's activities are important. This approach emphasizes democratic operational models in which children are no more seen as objects of action and action is generated by adults; instead, children are participating actors. The day care centre is created as an arena for children's participation where they can genuinely feel that they, too, take part in planning and implementing action. The practices of education and upbringing is not unilaterally individual-centred; they are interconnected with social aspects that emphasize the significance and role of community. (Lehtinen 2005b.)

The day care centre is also a social field that produces, materialises and enacts practices of embodied living. This is accomplished by grounding the daily practices not only on pedagogical ideas but also on children" health and safety issues. These commonly determine the conditions, needs, possibilities and restrictions of children's embodied lives by determining their time-and-place bound activities. Many of the daily routines concern children's bodies: getting dressed, undressing, meals, afternoon naps and hygiene. In addition to such routines children's daily lives are a rotation of both "official", programmed doings determined by the adult staff, and children's own "free" moments of play and games. Children are expected to possess a certain kind of agency, bodily competence, performance, use of their bodies and behaviour. These expectations are attached to daily practices/routines in the form of instructions, advice, prohibitions and orders as well as remarks and encouragement, for instance the encouragement when children are taken out to play to keep oneself healthy by appealing to their current or future bodily state. However normative the sociality of the day care centre is,

children are, and cannot be considered a homogenous group sharing the same bodily needs, and a group that can be moulded by the community. It is of paramount importance that children themselves participate in generating their own everyday life as well as in the definition of their body and its meanings. (Kuukka 2005.)

The social field when viewed in a school context (the second sub-study) is observed through the activities of children's parliament, which has been launched inside the school premises by children themselves, with the help of a participatory action project. The well-established and highly institutionalized methods of action and structural solutions of the school are inevitably reflected in the activities of the new arena – the children's parliament. The social field formed by children's parliament may be described as a new opportunity structure providing opportunities of participation. The concept refers to a space of contacts, a social arena where children can come together, and which becomes formed by existing social and cultural structures, the resources available for children to use, and the agency that is necessary for participation. In the structural sense, this implies a critical evaluation of school norms and the opening of a completely new 'participatory field' for children. In evaluating the experience of the children's parliament, as a social field and an opportunity structure, it is important to use qualitative criteria as regards the norms and regulations of the school, by asking how children experience them, and how they see these norms and regulations helping them to develop and/or prevent their participation. (Kiili 2004.)

Action resources: human, cultural and social. The action resources that are essential for the development of children's health and well-being in the social fields of school and day care centre proved to be the *human, cultural and social resources*. The premises for their development are different in each case. Action resources in themselves are defined either as "possessions" of social actors or available for them to access and use. They may also become available ad-hoc in actual situations and are then utilized when participating in shared social action.

The basis of *human resources* lies on the individual itself. They are manifested through different competencies (linguistic, cognitive,

physical, emotional, social), experiences and skills in social situations that are generated naturally. (Lehtinen 2005a.) Human action resources include children's physical resources that become habitual individually, in children's body work and bodily lives. The body then is a component of the bodily physical 'capital' of the child, which forms part of her physical resources. They are recognizable as the physical skills and competencies that are admired by children, either individually and/or collectively, as well as their overall physical characteristics. The interconnectedness of health and bodily lives is concretized as a resource producing well-being as children participate in activities and social interaction that they themselves find meaningful. The powerful cultural and symbolic meanings that children attach to the body become observable especially when children within their interaction act according to them. (Kuukka 2005.)

Cultural action resources are grounded in the material and symbolic culture that surrounds the individual, and their significance for action. These resources include material items, games and toys prepared by children themselves or provided for them, but also the many cultural (discursive) concepts that society attaches to the condition of childhood. (Lehtinen 2005a.) Both in arenas provided specifically for children and in the arenas that they have constructed by themselves, cultural capital becomes manifest in children's bodily lives throughout a number of daily routines, forms of managing their own bodies, and in relation to the material world. Children also manifest their cultural capital through cognitive skills in relation to their health and well-being, if also by choosing to ignore this knowledge. (Kuukka 2005.) And when participation is genuinely made possible for children, symbolic elements of culture, for instance values and attitudes towards children and their activities, are explicitly brought forward. These include currently held views on children and childhood, of age and authority, and of the social division of power resources between children and adults. (Kiili 2004.) *The utilization of cultural and human action resources as social action resources is absolutely central for the construction of daily health and well-being and in making participation possible for children*, the latter again feeding into the development and utilization of further action resources and, consequently, a better health and well-being.

Finally *social* action resources are grounded in the social field and its ever on-going processes. Social action resources are generated and come into existence through action itself and they therefore cannot be possessed by any individual child. They come into existence when individuals connect, within the processes that generate these connections and the structures and practices comprising the culture of action in the social field in question. Important elements here are commonly shared values, norms, meanings and procedures as well as children's mutual cooperation and the cooperation between generations, and support given by both adults and peers. Social resources, or social capital, manifests itself either positively or negatively, depending on its use. Positive/affirmative social capital is revealed through active cooperation, spontaneous sociability, good communal spirit and companionship. In contrast to this, negative social capital can cause inequality, discrimination and conflicts. In order to create social capital children need, first, 'relational capital' which is a further social resource formed within social relations. Relational capital may manifest itself in e.g. access to adult support or a well functioning friendship. They furthermore need 'contextual capital' which becomes manifest in knowledge and productive use of the action culture of the social field in question, e.g. in knowledge and use of its prevailing norms and regulations. Children finally need also various other resources, such as individual skills and resources deriving from embodiment, that they can use in spontaneously arising situations and build up social capital. (Lehtinen 2005b.)

Children's agency. Children's agency is constructed, realised and developed socio-culturally and situationally. It is also experienced and lived in the context of social fields, each relative to time and space. Children's own activity determines their agency, as its result but powerfully influenced by particular social fields, the structures and practices of the culture prevailing there and community interaction.

Four core elements can be distinguished in children's agency; each element is pivotal for the development of the agency of individual children. First, *the context of action*: the social field where social relations and networks are formed and where action takes place. (Lehtinen 2005a.) In the case of the children's parliament formed by children, important issues for

agency development are the structural solutions concerning action in the field – the degree of their child-orientedness. Child-orientedness assumes that timetables and work procedures for action in the social field have been negotiated openly and together with the children and children have approved of them. "Inserting" children into an action model provided by adults tends to limit opportunities of agency and decreases children's interest in participating. (Kiili 2004.)

A second core element of agency is formed by *agents themselves,* collectively and individually, each participant with her own characteristics. The practical, bodily and social skills mastered by children are central for performing valid agency. Children's bodily agency for instance may become visible either through intentional oblivion/inactivity and bodily non-action (e.g. withdrawal from conflicts). On the other hand, in order to be distinguished from the group children generate different signs of standing out through both (bodily) talk and bodily performance. In some situations a child may appear more "infantile" and act more "childishly" whereas in other situations controlling one's body and emotions helps to avoid being stigmatized as childish. Skilled performance gives added value to the child and facilitates her social positioning in a group of children. (Kuukka 2005.)

Procedures make the third core element of agency. This refers to forms of participation, organization and promotion of action, as well as kinds of decision-making processes. Children's participation in action tends to be comprehensive and besides verbal communication includes non-verbal communication, gestures, contacting and physical activities. There are many ways of agreeing on how to proceed an action; negotiating and using different forms of power among them. Children negotiate and exercise power in similar ways as adults: they may promote social agreement through conciliation, bargaining, proposals or compromises, but may also use persuasion, manipulation, threats, pressure and discrimination. (Lehtinen 2005a.)

The fourth core element of agency is given by the human, cultural and social *action resources* extensively discussed above. In their action children rely on their own cultural and bodily knowledge and on the resources

that are available to them and which they consider valuable and valid in particular situations. These action resources also include current views held by the society on children and children's knowledge. Perceiving children only as growing and developing beings and future adults restricts the way in which adults recognize and respect the information children may provide and, consequently, the kind of cooperation and support they will offer to children. (Kiili 2004.)

Significance and innovativeness of the research project

The essential *scientific relevance* as well as the *innovativeness* of the research project is grounded in its theoretical frame and methodological approach: an agentic-relational approach is able to produce a new kind of knowledge on children's health and well-being. Health and well-being are in the view of our (preliminary) results strongly connected to the quality and possibilities of children's individual agency and the communal and structural factors that form the social fields in which children daily live their lives. New conceptual tools for studying the conditions, processes and outcomes of childhood have been developed, applicable also in researching children's health. The approach furthermore integrates knowledge, conceptual tools and methods from a number of disciplines (sociology, early childhood education, community planning, social work) and allows the development of new methods for *research with children*.

The second dimension of the project's relevance of concerns *child policy*. The socio-political contribution that research on childhood can is closely linked to developments in children's rights. The project recognizes the on-going social transformations in children's social status, both in the institutions of childhood and in society at large. The strengthening of children's agency and the development of their participation are part of the diverse and rich social movement related with the development of children's rights* – the UN Convention of the Rights of the Child

* Eg. The United Nations Convention of the Rights of the Child, 1989; The Constitution of Finland, 1989; Eläköön lapset, 2000.

explicitly underlines children's rights to communication, rights of assembly and rights to engage in the decision-making that affects their own lives and living environments. These have been also the premises of this study; further development of a national (as well as international) child policy is in need of research that turns attention from institutions to agents: childhood as the central institution impacting children's health and well-being has been examined from children's point of view.

A third contribution concerns the pedagogical treatment of children in child institutions. We have challenged the prevailing thinking in developmental psychology and educational psychology by studying children's experiences on the functionality, participation and (dis)empowerment in prevailing pedagogical practices. Pedagogical innovation requires us to problematise educational and pedagogical practices and to reassess their theoretical basis. In this process, the sociological view that emphasizes relationality and agency is a critical resource.

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YOUTH CULTURES AS HEALTH LITERACY

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From Health Literacy to Health Sense

What then does health literacy mean? The term has been said to have been used for the first time in 1974 in an article 'Education as Social Policy', published in *Health Education Monograph* (Simonds 1974, according to Ratzan, 2001). In this context, health literacy is linked to health education in schools and the educational system on the one hand, and to health education and health promotion on the other. The focus is on students' capabilities. This can be put as follows: health literacy means (at least) the cognitive capacity and skills that students have to interpret their own and others' health. It can be seen as basic self-care skills, and also viewed against the background of discussions on individuals' responsibility for their own health.

If we are to study the latter interpretation in the Finnish context, we need to look at the 1990s and 2000s rather than at the 1970s. Referring to today's world, S.C. Rarzan (2001, 210) describes health literacy as both a goal and an outcome, the capital and currency needed to develop and promote health. This approach includes the dimensions of individuals, community, and culture (Kickbusch & Nutbeam 1998). In discussing health literacy as a technique that individuals need to acquire, it can be described as the capacity or skill to obtain, adopt, process and understand health information and services needed to make appropriate health decisions.

The social and communal dimensions of health literacy

In other words, both social and knowledge-based skills play a part when health literacy is spoken of. As sociologists, we welcome the fact that health promotion researchers underline the social dimension in their conceptual definitions (cf. Ratzan 2001, Kickbusch 1997, Selden et al 2000). As a matter of fact, in health literacy contexts, it would be useful to speak of community issues as well. This door was opened already in 1986, by the Ottawa Charter of the WHO (WHO 1986), which for the first time defines health promotion as a matter of communal action (cf. setting-based health promotion). The view that an individual's health is linked to community-based determinants highlights, for instance, the development of trust. This all opens a social dimension of health, saying that health can be promoted by creating a good living environment, improving the services which all citizens use, and supporting communities' own action. We might even ask what sort of social policy promotes health, and how does health connect to societal and cultural matters.

In addition to trust, social capital is one of the concepts used by Razan (2001, 213) to promote strategies and initiatives concerning health literacy. He believes that new thinking is needed in the debate on health promotion and health literacy. As used by Ratzan, social capital refers to community-based resources created through social relations among individuals and organisations; to models of co-operation and collaboration. Good neighbourliness, for instance, could be taken as a manifestation of social capital. It can build up positive trust between individuals as members of shared community. Accordingly, Ratzan concludes that social pressure could be used for discouraging poor health habits in neighbourhoods with a high level of social trust. In that case high level of social trust functions as a legitimate base for positive social control (and prospects of taking a stand). Take smoking tobacco for example: peer pressure, as a dimension in social control, can be imagined to act as a regulating force here. Smoking for many young teens in Finland has a strong connotation of adulthood, making them think of it as cool to smoke. By smoking many teens are trying to climb

the age status ladder and to say good bye to their own childhood and childish behaviours – braking into cultural adulthood and finding one's way in this new level (since adults are allowed to smoke, drink and have sex). That kind of meaning structure – which is relevant also to lighter alcoholic beverages such as beer and cider – is shared by their peer group. If this common culture could be discussed critically in the peer group it would perhaps result in alternative ways of acting. The key is peer pressure based on relations of trust. Adult interference could also be imagined here. Sport clubs could be discussed as sites and possible bases for such health promotion. Peer pressure is one dimension in such settings and communities. We might also ask, could peer group learning be used to problematise ice hockey players' use of snuff, for instance?

Social trust also offers structures for mutual help and support and everyday systems of cohesion. The community-based key to health would thus include plenty of interaction, plenty of civil society activities, plenty of participation, a good community spirit, shared rules, social cohesion, and an ability to live with others – a willingness and capacity to help and trust one another and to work for the common good. That vitality is produced through interactions between people and such positive sociability has been well documented in a study by Markku T. Hyyppä (2002) concerning the lifestyles of Swedish-speaking Finns in Finland's coastal areas of Ostrobothnia. There the average life expectancy for Swedish-speaking women is 85 years; for men, 78 years. The latter is astoundingly as much as five years longer than for Finnish-speaking residents of the same area. Hyyppä draws the moral that a sense of community produces health. Mutual trust is a cultural and social structure, which explains the longevity of Swedish-speaking Ostrobothnians. Apparently in Swedish-speaking Ostrobothnia people are able to support and help each other. Hobbies and joint activities knit mutual care into an everyday system, which has an effect on people's heath. Or is this a communitarian romantic illusion? Thus a post-Marxist critic can ask at least.

How could these research findings be translated into facts relevant to young people's lives? Difficult question, in that social capital is not a condition that can simply be produced through social technology, but it is rather the product of a long history of societal development. A critic might even claim that societal regulation is the useless pastime of communitarian romantics; the structure of rural agricultural communities from the 1950s cannot be transferred to the reality wavelength of twenty-first century information society realities. The whole village does not raise children, because the whole village has been wiped out by the onslaught of societal change. The truth about Swedish speaking Ostrobothnia is not the truth about the Kainuu region.

But perhaps a general level answer to the above question could touch on child welfare and youth policy – they must be such that they protect favourable conditions for children's and young people's upbringing, which sufficiently protect lasting human contact for children and young people. This is a broad field for discussion since work (including social security) and parents' working times are also part of the agenda, as are factors relating to day-care and school. The question is also asked, how is trust – also in terms of personal, intuitive and non-discursive emotional states and certainties, which tell me that I am cared about and I will survive – mapped out for a growing child? Certainly not without caring adults. In looking out over the entire field, it is easy to see the problem perspectives. In terms of economic terms of basic income, families with children have been in an increasingly difficult position in recent years (Järventie & Sauli 2001). The individualisation, which has been part of the social trends of recent decades is a structural feature of society, which has been and still is trying the fabric of society. Individualisation is seen, for example, in organisational functions as a sort of ethical change. Collectiveness today is of a different quality than in the 1970s, for instance, when young people formed the last generation of collective actors (Siisiäinen 2004). (Many believe that this is an entirely good thing.) There is talk of the coatroom society and the individualisation of basic motives for organisational work. Parents participate in sports club activities as trainers, coaches, supervisors and supporters as long as their own children are involved in the activities (Koski 2000). The tendency towards individualisation is also relevant to health literacy.

Individualization and health literacy

It has already been stated that health literacy can be investigated from at least two points of view: individuals' knowledge, (life) skills and techniques on the one hand, and the community dimension on the other. If we think about young people it seems that the most important recent priority in Finland has been to improve health education in schools. As a pedagogy-oriented strategy, it does not have any particularly strong community element. In the Finnish debate, the risk is that health literacy is too often viewed as a pedagogical or didactic discourse concerning individuals' knowledge, (life) skills and techniques. The way the prevailing approach – which has much to do with New Public Management (NPM) – individualises the issue is problematic. This is even more so as, since the early 1990s, the dominating trends in the educational domain and education policies have increasingly revolved around specialisation, efficiency and freedom of choice (Antikainen, Rinne & Koski 2000). This concerns not only upper secondary schools and higher education. In the spirit of today's pursuit of individualisation, 13-year-olds still attending basic education are supposed to be mature enough to choose their study periods (Rimpelä 2002).

Stressing efficiency and individuality definitely has its own dynamics, but the price for efficiency and specialization in the world of education is paid in terms of the educational ideals of general knowledge and equality. Pupils do benefit in some ways, but at the same time already at a young age they have to choose between different curriculum profiles and many alternatives. The buzz words in elementary schools which are opening up to marketing – schools with pupils under 10 years old – are *clientele*, *demand*, *competition* and *markets* (Silvennoinen, Kivinen & Ahola 2002). This means the expansion of a certain sphere of freedom, and at the same time specialisation begins even younger with responsibility for their studies resting on the pupil's own shoulders and those of his or her parents. This model favours independent, competent and highly motivated pupils and young people. How many of them are there? And how large is the *maybe I could, but I just don't feel like it* group among elementary-schoolers? And what of those for whom their life task is

still totally fuzzy? Younger and younger pupils are confronting the existential question: *do I measure up to the existing criteria for success?* Can they handle it? An individualised life situation easily generates not only solitude but also loneliness. Elina Virokannas's contribution in our project tells much about the loneliness of young drug addicts.

Contemporary young people and school pupils live to a significant extent in a *consumer oriented culture*, which emphasizes adventure, enjoyment and pleasure, hedonism even – physical experience in general – as the central point of orientation for young lives, as well as *managing risks and self* as the corresponding *self-techniques*. Without self management techniques – generally referred to as *life management* – and the ability to operate according to the standards one sets for oneself, young people get sucked into a web of addictive behaviours. Anorexics are, from this perspective, interesting as over-achievers in the area of self management. For them self control has gone a bit too far as Anne Puuronen's sub study shows (see also Puuronen 2003).

Under these circumstances it is easy to label the upcoming generation as the *compulsory individual choice generation* This is an especially appropriate label for contemporary Finnish young people – young people living in a world saturated with migration movements and applications of information technology. The generation can also be well described in terms of consumption and competition, which, in achievement driven schools and services operating according to market principles, are simply dimensions of choice that go with being a client. "Clientele" as a rhetorical term has spread throughout public services these days, to the extent that even the police and the prison system have "clients" in need of service. This sort of life landscape is also a particular horizon of demands. One must be able to make choices and know what one is capable of in order to get by in the information society, where schools are characterized by more classlessness, options and specialisation. The generation enriched by free choice has not in every respect been given the same comparative standard of living: in 1990 16% of all families with children were in the bottom fifth of the population in terms of per capita income; a decade later the figure had risen to 22.5%. (Järventie & Sauli 2001.)

The individualising approach to health literacy is problematic in that the linkage to community is all too easily lost if health literacy is equated in a simplistic way with individual skills and life management techniques among the young. What is needed is a societal community-based approach to the theoretical and empirical research debate on health literacy. That need can also be inferred from the Jakarta Declaration which speaks of strategies or factors that favour health promotion, including building public health policies, creating supportive environments, strengthening community action, developing personal skills, and re-orienting health services. As a reminder to those who advocate the biomedical view of the world, it can be stressed that in addition to its various other aspects, health is also a matter of society, community and culture. In this spirit, Harri Vertio (1997), for instance, has discussed the impact of *socially poisonous environments* on children and young people.

Health literacy in the era of New Public Management

New Public Management (NPM) is defined a *neo-liberal administrative doctrine* that has since the 1980s in Europe been seen to favor one-off projects and markets instead of traditional bureaucratic administration and universalistic public services (Clarke, Gewirtz & McLaughlin 2000; Rantala & Sulkunen 2003). A 'fuzzy turn' (Hoikkala & Paju 2002, 23) took place in Finland in the 1980s, related to the deregulation of capital markets. It involved a tendency to dismantle centralized regulation, to increase municipal autonomy and traditional sector administration, and to introduce project-style activities (cf. Anttonen and Sipilä 2000). This was not a matter of any straight forward administrative reform or a rational NPM conquest of Finland: the welfare state system was supplemented while regulations were being dismantled in the late 1980s (Julkunen 2001).

The NPM doctrine is also built upon community strategies (cf. Rantala and Sulkunen 2003), often with a borrowed ethos, which has clear

symptoms of communitarism; e.g. community orientated prevention. The system of state-controlled, centralized alcohol policy, for instance, was dismantled in Finland in the 90s. To fill the vacuum in addressing substance abuse problems that was created with the elimination of measures that were part of the state-control alcohol monopoly, efforts were initiated to develop local substance abuse prevention activities based on multi-professional project work across administrative boundaries. The NPM has meant a shift of responsibility from the welfare state to local authorities, market forces, civil society, families and individuals. We might even speak of the dismantling of paternalistic state control, and the decentralization of power and responsibility as well. According to Pekka Sulkunen (2003) the goal of (rhetorical) administrative reform has also been to do away with bureaucratic problems, dismantling normative direction by changing over to goal and framework direction, and to negotiating Finland's EU membership. This new administrative thinking has in turn been criticized for weakening the basic services of the welfare state, not taking a stand on matters, avoiding responsibility and stressing structures, such as multi-professional networks, instead of clarifying content goals (e.g. Määttä 2004; Rantala 2004).

How do the new public health thinking (Petersen & Lupton1996) and the concept health literacy relate to the above-described change? Rhetorical discourses with an emphasis on such ideas as 'freedom of choice' and 'guidance through expert knowledge' play an increasing role in both of these health policy orientations. Compared with life in Finland in the 1950s, the way individuals and individualization are being constructed in a society of new public management in the early 2000s is completely different. Today, the ability to exercise one's freedom of choice is a key component of success. While the '50s were an era of a culture of control and paternalism, we now live in an era of *self control*.

Health literacy moulds itself rather well to a discourse space emphasizing self control and individual responsibility. As a discourse and public management model, all this is interestingly ambivalent – wavering and also challenging. On the one hand, we have the new brave individual (the

free subject) emerging from the overwhelming freedom of choice; on the other hand we strive for a new sense of community – an ideal way of being and a shared community spirit, like that typical of the Swedish-speaking minority living along the Finnish Ostrobothnian coastline. To put it simply, the concept of health literacy anxiously reaches out in many directions. From a sociological point of view this can also be seen as a challenge in a fruitful way. This fruitfulness does not (only) mean that the sociologist's only major opportunity is to go around explaining that individual lifestyles and resultant health or ill-health stem from living conditions and the increasingly brittle fabric of community; or that NPM thinking is a flabby philosophy and a contemporary model of governance typical of overripe consumer capitalism, resulting in a threat to democracy, unfair cost savings and badly coordinated chaos. These sorts of arguments have been presented – just look at Mirja Määttä and Jaana Lähteenmaa's critiques of NPM of in this volume (see also, e.g., Rantala 2004; Sulkunen 2003; and Sulkunen, Rantala & Määttä 2004). But Tuukka Tammi's contribution in this volume, about launching Needle exchange programs (NEPs) in Finland in the years 1996–2002, opens another perspective in this field – there are also successful and practical applications of new public health movements with good results. So the concept of health literacy also invites critics, experts or laymen, to step, with an affirmative attitude, into community fields (cf. Paakkunainen 1999 and 2004). In other words, it also provokes genuine efforts to devise community-based health information interventions that reflect and stem from young people's daily life. Such interventions can also be based elsewhere than in schools, perhaps in some local pockets of young people. Elina Oinas's article in this volume offers some good ideas for reflective working styles to be adopted in youth work projects.

From health literacy to health sense

Our full project consisted of nine sub-projects, one of which investigated anorexia (Anne Puuronen); four, drug cultures (Mikko Salasuo, Jaana

Lähteenmaa, Kati Rantala, Elina Virokannas); one, preventive drug policies and practices (Tuukka Tammi); one, health promotion in sports hobbies (Pasi Koski); one, girls' groups as means of preventive health care (Elina Oinas); and one, evaluating a local prevention programme (Mirja Määttä). The project was built on the concept of health literacy. It was a term borrowed from public health research debates concerning health promotion. One interesting parallel is the apparently inconclusive speculation concerning *media literacy* within media pedagogy (Suoninen 2001, Suoranta 2004, Hoikkala 2004). Although the research team was not particularly well aware of its precise content and didn't know whether it would work in the individual sub-projects, the concept of health literacy provided a conceptual stepping stone for the group's research efforts. At present, as the project has approached its end, it can be said that the concept of health literacy worked well in the sense that it sparked discussion and debate across and within the sub-projects. At the same time, however, it has become obvious that the concept could be revised by detaching it from the rationalistic, excessively individualising ideas it carries, so that it could take better account of the bonds between individuals and their social contexts.

Health promotion and health maintenance are not only concerned with the extent to which individuals are able to obtain, adopt or apply health information. Prevailing circumstances and relationships of trust as part of social capital also have a major impact on, for instance, who is believed, what kind of information is picked up, and how this information is applied to one's own life. Drug users, for instance, are sceptical of publicly produced drug information and place more trust in the drug culture's own internal information, although this information can in part be based on false beliefs, as Mikko Salasuo shows in his sub-project. Circumstances also play a part. For instance, the illegality of drugs in Nordic societies forces users to rely on drug dealers' word concerning the quality of the drugs they buy, as there are hardly any possibilities to test their composition. The fact that users make attempts to avoid risks by using the same drug dealer whenever possible bears witness to the role of trust in health behaviour. In addition, such basic issues as one's general understanding of health and the role it plays in

one's own lifestyle are constructed in social relationships, not only as skills, capabilities and knowledge.

A new concept that our research group has been trying out is *health sense*. The rational assumption frequently associated with health literacy of information having a direct effect on individual changes in behaviour is problematic. Children and young people often develop their own original concepts of health within their peer groups. Anne Puuronen's study open up consumer capitalist young people's life constructs in relation to embodiment – and that landscape appears at least to often be rather pressured, stressful and contradictory. If we live in a time in which the Finnish elite emphasise competitiveness, accomplishment and success; that presents critical questions for health as well. Returning to Anne Puuronen's contribution here, the ethos, which drives people these days to strive for total success in all of life's arenas does not promote health. Our interpretation: health does not appear in our current sort of society and culture as a crystallised entity to be written of so that children and young people could simply read and thus properly understand it. Thus *health sense*, compared with health literacy, is a more pertinent term in this uncertain, chaotic society: it also includes unconscious possibility. Health sense can be seen to include health knowledge and literacy, which, however, are not its sole components. Health sense is also associated with choices, understanding and interpretation. In this way, community-based relationships of trust are included as well. Young people's health sense can be seen to be constructed in a whirlpool of competing influences, where not only individual know-how and various immediate community memberships but also various sub- and counter-cultures and their mother cultures, and the prevailing value and norm system come up against each other.

The task of this project was to assemble an application, which could be called a *reflective health pedagogy model* for youth directions. Its material arises from the communal emphases of the health literacy discussion, but trying to avoid the naïve collective-kissing and nostalgic romanticism of communitarianism. Yet there is still a fierce critique of wrongful, atomising individualisation. Be it as it may that the background here is a steadfast clinging to the Nordic welfare state model, the core values of

which are equalising income differences and preventing polarisation, this sort of emphasis does not hit your ear with the attempt to strengthen civic action. NGOs, public authorities and other civic actors can also co-ordinate their action locally in an intelligent manner. In concrete terms the reflective health pedagogy model comes from an idea originating especially in Elina Oinas' investigative group discussions; as well as Kati Rantala's constructive critique of drama pedagogy. The latter text proposes interactive enlightenment from a pedagogy of experience – or so it can be read. If it is a matter of substance abuse prevention work, we are not mechanically looking on the individual level for noticeable changes in behaviour, but we are rather moving, perhaps precisely on the tracks of NPM critics, on the level of communal discussions; mapping out social capital and looking for mutual commitments of trust. The important thing here is peer-instruction (see also Hoikkala 1987) and the idea of the pedagogical group. This sort of group can also be on the net. That is where youth cultures are often hiding these days.

Sub-projects

Typical problems in which contemporary society's and culture's expectations towards the body are quite obvious are various eating disorders; in extreme cases anorexia and bulimia. "Fat" is bad, writes *Anne Puuronen* in her study stripping down modern culture's demands for beauty, efficiency and health. Someone who cannot control her body is considered to be incompetent in general. To give the impression of being competent – and healthy – one must follow a low-fat lifestyle. In extreme forms avoiding fat can even become a quasi-religious activity. Beneath the group expectations and normative pressures, a health promoting, in itself good thing may become a force, which distorts the person's health sense dramatically with harmful results.

The use of drugs is a subject regarding which the first ideas to come to mind could be a total lack or failure of health literacy. This, however, is not necessarily the case. *Mikko Salasuo's* research on recreational drug use shows how ecstasy users attempt to maximise the enjoyment of the substance and minimise the risks arising from using it, and health

literacy expressed as risk awareness is of great interest to users. The problem is that users do not really trust official drug information, which is easily seen as containing exaggerated scare-tactics. They trust more peer-information from other users and the drug culture, which in turn is based in part on nothing by superstition. Thus the user's health sense is shaped in a landscape where the possible harms of using are labelled in very similar ways in both official and unofficial information circles. The shortcoming of official drug information is that it does not leave any room for personal self-control, whereas peer-counselling within the drug culture over-emphasises this factor.

Elina Virokannas in her study categorises ways in which underage drug abusers who have wound up in treatment analyse their lives and drug use. Her data was gathered by interviewing young people in a treatment unit and going through their responses using methods of discourse analysis. According to this analysis the young people's identities were inconstant and wavered between the drug culture and the so-called normal life representing mainstream culture. Boring life defined as getting through routines was associated at times with normal life, at times with drug culture and its 'gotta-do-some-stuff-again' rhythm. In addition, young people appeared in their speech to be very lonely: ties to old non-drug using friends are cut off and time spent in user circles has brought just acquaintances without any proper friendships. What is the place for health literacy in this context? Is that too inconstant? In any case research has shown what a demanding a job it is to work in juvenile drug rehabilitation.

Health literacy and paying attention thereto is not, however, excluded even in the most problematic forms of behaviour, as seen in *Tuukka Tammi's* study analysing and the spread of harm reduction policy and needle exchange programmes in Finland. Increasing drug problems, HIV and other infectious diseases becoming more common and international influences have lead to a national health perspective and harm reduction thinking coming into Finnish drug policies. Starting needle exchange programmes, however, still requires a group of influential actors to push the matter and the adaptation of the reform to national conditions. In the stormy conditions of various viewpoints the important issue was what rhetoric and bases the reform was based on. In the reform

drug users are not treated just as criminals. Users' needle and syringe exchange and the health advisory that goes with it consider drug users to be active participants in the national health situation, which have a desire in support of using the service and health literacy.

Multi-professional operation is the buzz word of the day, which is suggested for many problem areas. In her study, *Mirja Määttä* investigates the preconditions for success in this sort of operation on the basis of empirical material she colleted in different multi-professional groups. Multi-professional team work in promoting health and well-being does not necessarily produce the desired results. For example, there are problems of sectorized terminology in communication and mutual understanding when different actors keep seeing things through their own professional discourses. Operation can get stuck in place, producing mostly frustration for its operators. In order to succeed, multi-professional operations need concrete goals which serve as a focal point for day to day operations, and they need to see the realization of some of these plans to maintain motivation. Some multi-professional projects succeed well; some produce only modest results.

Elina Oinas's research in turn compares different kinds of experiences from girls' groups. Gender segregated girl groups in youth work have a clear opportunity to promote health. For these groups to succeed, however, requires a clear method, model and functional rules. Just gathering together young people of the same gender to discuss things is not enough to produce satisfying results, rather it might even be necessary to bring some disturbing factor to a head.

Jaana Lähteenmaa's study maps out the diverse field of intoxication prevention work. In the landscape of new public administration, intoxication prevention projects have garnered a big chunk of youth work. Intoxication prevention is still conceptually vague, however, and the rhetoric used in grant applications paints a picture of young people where they are seen primarily as a risk group. The pictures of young and youth culture vary, and the field of prevention projects can be characterized by two axes: dialogue vs. indoctrination/manipulation as a means of influencing the young people; and homogenous vs. heterogeneous as a

picture of youth culture. The picture of young people and youth culture in these prevention projects is more pessimistic than optimistic. A more optimistic picture could focus on small but significant changes in the health literacy of young people (e.g., the rising amount of abstinent young people, and the new trends in eating and living) which haven't been taken into account when planning the prevention programs. This could be seen as a mistake even, and the situation in this sense should be improved.

Kati Rantala, *Mikko Salasuo* and *Markku Soikkeli* are critical in their study of the non-realism and limited effectiveness of drug risk education using experience-based teaching and theatre. Rather than effectiveness, the goal becomes tuning people in to the problem, general debate, starting up operational processes and critical evaluation of prevalent concepts. Brechtian epic theatre is mentioned as one way of doing this, which in addition to its message presents the audience with questions, viewpoints and intellectual challenges – attempting to combine experience with realisation. Rather than manipulative risk education, the authors suggest up-bringing based risk education, and a whole group of possible plot lines for making epic theatre pieces. The study also points out that when health literacy is spoken of in the context of drugs it is a matter of a global mesh, which relates not only to individuals' health practices in their own cultures, but also to international organised crime on a mass scale which feeds on an increasing inequality both within and between nations.

Health promotion is considered also as a special area in terms of recreation and sports. *Pasi Koski's* questionnaire research among school children shows how health awareness and things associated with health have been incorporated into young people's sporting hobbies. The results show that health literacy is different for girls than for boys. For girls athletic hobbies and belonging to sports clubs seems to promote health literacy, expressed in terms of the concepts associated with health. For boys no equivalent effect was found. If boys' weaker health literacy expresses traditional masculine values, then the research raises the question, do boys' sports clubs do more to reinforce these bastions of masculinity than to challenge old traditions?

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HEALTH, HEALTH BEHAVIOURS AND NEW INFORMATION AND COMMUNICATION TECHNOLOGY IN ADOLESCENTS

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Alarming trends in adolescent health and the role of ICT

In the 1990s, after decades of positive development, health of Finnish adolescents was worsening. There were deteriorations both in physical health (overweight, neck and back pain, health complaints) and in mental health (depressiveness, stress, fatigue). In order to assess causes behind this worrisome development, we needed to explore both the emergence of new risk factors as well as changes in those previously known.

Although the causes were most likely to be multiple (physical, social, and cultural changes), it was obvious that the explosion in the use of new information and communication technology (ICT) could play a role. The essential feature of the concept of the new ICT is its interactive nature. The user has an active part and can influence the course of events (computers, Internet, mobile phones, console and video games). The modern ICT activity differs crucially from the more traditional TV watching that was characterised by one-way communication.

The understanding and knowledge about the consequences of ICT usage on children and adolescents is scarce. In the beginning of the new millennium, there still was a lack of research on the impact of ICT usage on adolescent health, and children's and adolescents' cognitive, emotional, and social development. Although the associations between violent digital gaming and aggressiveness have received much attention among the researchers, even there are still plenty of open questions.

Health-related effects of ICT use in adolescence can be divided into physical effects, mental effects, lifestyle and social effects, effects on health literacy, and effects on child development. Our research group produced new knowledge on these subjects, with direct implications for the health promotion of children and adolescents.

Usage and gendered usage

In the beginning of the 1980s, computer use by adolescents was negligible, but it increased steeply: the average daily use among 10–14-year-olds was 11 minutes in 1987–88 but rose to 47 minutes by 1999–2000 (Niemi & Pääkkönen 2001). Today, most adolescents use computers and play digital games regularly, they have a mobile phone of their own and they also keep contacts via e-mail and Internet chatting. Digital games are played not only by computers but play consoles, mobile phones or via Internet.

We measured the use of ICT in the Adolescent Health and Lifestyle Survey in 2003 (12–18-year-olds, N=6761). Nearly every 14–18-year-old (92%) used computers at least weekly, and nearly as many (87%) used Internet (Hakala et al 2005, Wallenius et al 2005, Koivusilta et al 2005a, b). Of the same age group, 35% reported daily computer usage and the percentage reporting daily digital gaming was 35% too. Even though the numbers are high, daily viewing TV, video or DVD was still much more common (86%). Sixty-nine per cent reported daily use of mobile phone, while only a small percentage do not use it at all or do not have one available. The exposure time to ICT is remarkable in the adolescent population today. This activity is not only taking up a part

of adolescents' free time but computers are used at school and for doing homework after school as well.

The results revealed a distinctively gendered ICT usage (Punamäki et al 2005, Hakala et al 2005). Boys played more often digital games and used more frequently the Internet than girls. Of the 14-year-old boys, 42% played digital games daily for two hours or more, compared to only 4% among the girls. Girls' mobile phone usage was more intensive, e.g. among 16-year-old boys only 7% used mobile phones for two hours or more per day, while among the girls the corresponding figure was 15%. Differences in computer usage were smaller.

Socialization and psycho-physiological differences between genders may explain boys' preferences for digital game playing and Internet surfing and girls' preferences for mobile phone communication (Punamäki et al 2005). Girls are more advanced than boys in emotional and communicative capacities, including emotional expression, awareness of own and others' feelings and interpreting complex verbal and facial-kinesthetic messages. For boys, Internet surfing and traveling in cyber world provide opportunities for adventure, exploration, competition and satisfaction of curiosity. Girls in turn dedicate their time to 'home matters', sharing experiences, gossiping and maintaining intimate relationships by using modern communication tools that provide them with constant human contact.

Intensive usage of ICT and mental and physical strain

The ICT usage today can be considered as a normal part of everyday life among adolescents. However, to a number of adolescents, an intensive ICT usage characterised by long hours is usual practice. Among 14-year-old boys 10% and among 16-year-olds 12% play digital games at least 4 hours per day (Hakala et al 2005). Four per cent of 14-year-old and 6% of 18-year-old boys use computers daily four hours or more, and 3% of 16–18-year-old boys have at least 42 Internet hours every week. Two per cent of 14–18-year-old girls use mobile phone five hours a day or even more.

Long hours do not represent the only characteristic of an intense use of ICT. Use of ICT is often an activity that needs directed attention (Kaplan 1995). Directed attention is under voluntary control, but it requires effort and is susceptible to fatigue (e.g. mental exhaust after working intensively). Digital games have also been developed visually more realistic while the interactive nature of playing and the active role of the player have increased. These kinds of features of visual realities may lead to a sense of immersion or psychological flow characterised by focused concentration, distorted sense of time, and temporarily lost awareness of self.

Intensive use of ICT can cause both mental and physical overload. In visual display unit work, as with computers, information is displayed on a screen and processed via manual input devices like keyboard and mouse. The devices remaining immobile on the desk, the worker is obliged to maintain the same static posture while working. Computer work means sitting at desk with the neck in flexion position, while the keyboard and mouse operation requires repetitive upper extremity motions. Insufficient recovery after local muscle fatigue is believed to be essential in the genesis of muscular pain in static work.

Physical strain: musculoskeletal pain

Neck-shoulder and low-back pain became more common among 12–18-year-olds in Finland in the 1990s (Hakala et al 2002). The trend was turning upwards in the middle or in the end of the 1990s, which fitted well with the increase in ICT usage. A hypothesis was presented that ICT usage, particularly the use of computers and digital games, increased the risk of musculoskeletal pain.

This hypothesis was tested in the Adolescent Health and Lifestyle Survey 2003 data. Computer usage increased the risk of neck-shoulder pain (Hakala et al 2005). Two hours or more per day was a threshold after which the neck-shoulder pain started to increase. Times used for digital gaming, using mobile phone or viewing television were not related to neck-shoulder pain. The association with computer use was in

accordance with the hypothesis. The repetitive work of upper extremities causes muscle fatigue and pain.

The results for low-back pain were somewhat different. An exposure of five hours of computer use or digital gaming was needed in order to increase the risk. It was an interesting question why digital gaming was related to low-back pain but not to neck-shoulder pain. The most likely explanation is that gaming mostly requires repetitive hand motion in a sitting position. The basic mechanism of gaming relies on dynamic action where players change postures freely and loading of the upper extremities is less. On the other hand, low-back pain is known to be related to prolonged sitting position, and this is confirmed by our findings when exposure times in digital gaming and computer use were high.

The school ergonomics study – better sitting postures for children in the information society

More sitting, and often in static postures straining muscles and spine, is a typical consequence of an information society. School-aged children sit first several hours at school and then in their free time, as shown above, owing to ICT usage. A proper sitting posture and ergonomically designed and adjusted school furniture are seen health enhancing not only among adults but among children too. An intervention was planned to test a new design of school furniture: adjustable saddle-type chair and adjustable desk with belly hole for the body and its effect on sitting postures and musculoskeletal symptoms.

The final sample consisted of two classes in two Swedish-speaking schools (6th and 8th grades, altogether N=101). The intervention school got new furniture after the baseline study, the control school continued with conventional furniture. The follow-up was originally planned for one year but was decided to be continued for a second year (three classes participated).

The baseline results indicated a mismatch between the anthropometrics of children and school furniture (Saarni et al 2005a). When the pupils

of the 6th and particularly the 8th grades can have differences in height of 30–50 cm, the size of school furniture is often the same for everybody. The results obtained from these two schools are most likely applicable all over the country with some exceptions.

The preliminary results of the intervention show that new furniture significantly improved sitting postures but had little effect on musculoskeletal symptoms (Saarni et al 2005b). The new furniture was accepted by the pupils and found comfortable.

Internet addiction, a potentially problematic use of the Internet

An instrument was developed for studying whether children of ages 12–18 show signs of a problematic use of the Internet. Most studies so far had investigated on-line populations and represented somewhat older age groups. The developed instrument was modified from the criteria of game addiction, now presented also as a clinical diagnosis in DSM-IV. The postal survey of the Adolescent Health and Lifestyle Survey 2001 data were used (N= 7292, 12–18-year-olds).

Internet addiction as defined likewise game addiction was observed among app 1.5% of the 12–18-year-olds and app. 5% of the daily users of Internet (Kaltiala-Heino et al 2004). Even if the clinical consequences are open, further studies are urgently needed to understand the phenomenon. Reports from addiction clinics together with anecdotal evidence from parents suggest that information is needed.

Overweight and ICT usage: a relationship with computer and TV

As a sedentary behaviour, ICT may serve to displace engagement in more strenuous activities. In decreasing the amount of physical activity during the day, ICT use can be hypothesised to decrease energy consumption and thus increase the risk for overweight. The relationship was tested in the Adolescent Health and Lifestyle Survey 2001 data.

Overweight was associated with increased times spent on viewing TV and using computer among girls (Kautiainen et al 2005). Among boys, a similar relationship was found, but it was not statistically significant. Using computer for one hour or more a day, the odds ratio for being overweight was 1.5 compared to using less. Against expectations, time spent on playing digital games was not associated with overweight.

Playing digital games or using computers may differ from television viewing e.g. in their effects on physical activity or eating habits. There may not be time for picking up snacks and sweets when playing digital games, while watching TV, however, the commercial breaks and food advertisements are created to inspire visits to the kitchen. Further studies are planned to enlighten these relationships.

Health compromising behaviours, sleeping habits and ICT usage

The first interest here was to test a hypothesis based on ecological data and presented in the British Medical Journal that the use of mobile phone among adolescents has contributed to decreased cigarette smoking. The suggested mechanism was that mobile phone bills take over cigarettes in priority when concerning the spending money of adolescents. This hypothesis was tested in the AHLS 2001 data. It was shown that the use of mobile phone and use of tobacco are positively related to each other and taking into account the weekly disposable money of adolescents did not change the relationship (Koivusilta et al 2003).

The second paper continued to elaborate the relationship. It was shown that the use of mobile phone was strongly related to smoking and drinking and their intensity, and was thus part of the same health compromising lifestyle (Koivusilta et al 2004). The amount of mobile phone use increased when the frequency and intensity of these behaviours increased. However, taking into account the disposable money somewhat weakened the association. This suggests that health compromising behaviours may, to some extent, be commodities substitutable by mobile phone use. As smoking is considered a main indicator of a lifestyle where

interest is directed towards leisure, peers and "street culture", keeping contact with friends may be extremely important. Mobile phones may also serve as an important mechanism for organising access to tobacco and alcohol, not legally sold for youngsters under age 18.

In the third paper, we modeled the possible mediating role of sleeping habits and waking time tiredness in the association between ICT usage and perceived health, measured by health complaints, musculoskeletal symptoms and self-rated health status, using the 2001 data set (Punamäki et al 2005). Girls were more vulnerable to the negative health consequences of ICT-usage in that intensive mobile phone usage was associated with health complaints and musculoskeletal pain both directly and via deteriorated sleep and increased waking-time tiredness. The results substantiated the mediating hypothesis: intensive ICT-usage was associated with poor perceived health when it negatively affected sleeping habits.

The results raised important questions for further studies: why would intensive mobile phone usage associate with less and irregular sleeping among girls but not among boys, and why was intensive computer usage associated with poor sleep among older boys but not among girls? Earlier research focusing on sleep consequences of computer and Internet usage has explained the negative impacts by increased excitement and physiological arousal. Children's minds, absorbed in virtual worlds, need a longer time to calm down from these excitements. That explanation would be valid for 16 and 18-year-old boys but not for girls, whose sleep was not affected by digital game playing or Internet surfing.

There are no easy explanations for why girls' sleep, in turn, was negatively affected by intensive mobile phone usage. The intensive female mobile phone usage in adolescence may be part of a lifestyle and a developmental stage characterised by close friendships, disclosing secrets and sharing important first-time experiences. The ICT-century has provided girls with an effective means of communication, which may not have replaced the 'traditional' face to face friendships, and broken the time and space limits of togetherness. A simplistic explanation would be that highly social girls sleep less and irregularly, because they 'have no time for that'.

Again the biological and neurological explanation would be related to findings that intensive usage of mobile phone activates brain areas that are responsible for calming down and sleep. However, cautiousness is needed for accepting these explanations and further research with more thorough material is needed to understand the phenomena.

Orientation in adolescent ICT use by socio-economic factors and health – a digital divide?

The health and lifestyle effects of ICT may contribute to emergence and sustenance of health and welfare differences between population groups, particularly if ICT use divides adolescents into educational careers leading to different social positions. Although the number of adolescents with access to computers is increasing, families differ in their capabilities to provide children with the various forms of ICT, as well as in their ways of using ICT to offer skills and content most beneficial for the child's development. Unequal access to such uses of ICT as to support healthy intellectual, social and physical development has been claimed to lead to a "digital divide". It was hypothesised that some adolescents use ICT in ways offering multiple opportunities for furthering skills to utilise information, while others use it mainly for gaming and contacting friends. These relationships were explored in the 2001 data set.

There existed a digital divide among adolescents in that orientation to computer use was more common in educated, well-off families, while digital gaming and mobile phone use accumulated in the opposite end (Koivusilta et al 2005). The poorest health reported by mobile phone users could be a consequence of a health-compromising lifestyle (use of tobacco and drinking alcohol).

ICT and restoration: motives for digital gaming

Although the negative consequences of ICT usage can alarm parents, teachers and medical community, the coin has another side to offer. ICT may provide such fascinating experiences as would serve to detach its users from directed attention fatigue, or to generally help adolescents

recover e.g. from school day or homework and reorient themselves to other activities, or to help them to overcome tough experiences. Very little is known about this.

Our first attempt to explore the positive effects of ICT usage on the health and wellbeing of adolescents was to measure the motives for digital game playing – a rarely studied topic so far. This was done in the 2003 data of the Adolescent Health and Lifestyle Survey.

Two main dimensions of motives emerged: instrumental motives (learn new things and operations, share topic for conversation, use and develop game playing skills, experience different roles/worlds) and ritualised motives (pass time, amusement; recover, relax; escape everyday life, forget worries) (Wallenius et al 2005). These dimensions corresponded to the same motive dimensions as those found in prior media research. The importance of all motives increased with increased playing time. Instrumental motives were more important to boys and associated with earlier bedtime and worse health among them. Digital games seemed to have the same basic functions as media in serving adolescents' mood management and stimulation seeking. Among boys, gaming can be interpreted as part of male socio-cultural communication.

New flowers flourished along the way

The research co-operation of the Tampere University School of Public Health and Department of Psychology formed an umbrella project focusing on the negative and positive effects of information and communication technology on children's development and health. Seed money was granted by the Information Society Institute of the Tampere University and Tampere Technical University. The funding for the Adolescent Health and Lifestyle Survey by the Ministry of Social Affairs and Health had a crucial role. Later on, the Academy of Finland granted funding for a project "*Stress, strain, restoration and development of school-aged children – the role of ICT*" that was started in 2003. For the future, a more thorough understanding of the role of ICT in the development and health of adolescents – both the negative and the

positive side of the coin – will be our primary target, with the specific aim to secure more knowledge valuable for the health promotion of this age group.

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THE EFFICIENT FAMILY: AN INTERVENTION STUDY ON THE PREVENTION OF MENTAL DISORDERS IN CHILDREN WITH AFFECTIVELY ILL PARENTS

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Caring for the children of the mentally ill

Mental problems are a cause for increasing concern. It has been estimated that depressive disorders will be the most important cause of disability by 2020. Mental disorders have high costs for the society and for the individual. Clinical experience and an accumulating amount of research show that the patients' families and children also carry a big burden. It has been estimated that 40% of children with depressed parents are likely to develop major mental disorder by the age of 20 and 60% by the age of 25 (Beardslee et al 1998). The transmission of mental problems from parents to children has been documented in Finnish studies (Erkolahti 2002, Nurmi 2004). The intergenerational transfer of mental illness is one of the major pathways to psychiatric morbidity and social marginalisation.

The risks for developmental deviations and psychiatric illness are so high for the children of the mentally ill that promotion of their development and prevention of disorders is indicated (Institute of Medicine 1994). The Finnish Child Protection Law provides that the needs for care and support of the dependent children of mentally ill patients have to be attended to. However, this has not been systematically heeded in

health care although the children are within the reach of services as their parents are mental health patients. According to a Finnish study (Leijala et al 2001), about one in three or four mental patients have dependent children.

Effective Family Programme was developed (1) to raise the level of knowledge and awareness of children's needs, (2) to provide the health care system with an evidence-based means to prevent children's disorders, (3) to implement and institutionalize the methods and (4) to build a service network between child and the adult, and health and social services around the families.

Effective Family Program is a large nationwide training, implementation and research program aiming to induce system-level changes in health care as well as in clinical work with patients. The program started in 2001 and is ongoing. It is hosted by the Research and Development Centre for Welfare and Health (Stakes) and funded by the Finnish Academy and the Ministry of Social Welfare and Health.

Raising the level of knowledge of children's needs

The children of the mentally ill have been called invisible children, and rightly so, as their needs and problems have gone unnoticed by the services and society. It was therefore important to raise the level of awareness both in the public and in the services. It was also necessary to raise interest and a sense of responsibility with the administration in health care organizations.

Effective Family Program organized lectures, workshops and full-day seminars around Finland to educate health care personnel. Consultations with clinic administrations and clinical leaders were carried out. A series of three papers were written for publication in the Finnish Medical Journal describing the principles of the preventive work (Solantaus 2005), the implementation of the work in primary health care (Pietilä 2005) and in psychiatric services (Väisänen & Niemelä 2005). In addition, a paper for policy makers was also written and published by Stakes (Alasuutari et al 2003).

It was equally important to inform the public. Over 50 appearances in the print media and television have taken place: *Effective Family Program* has been well publicised in the media. The aim was to encourage service users and their families to demand support for the children. A guide book 'How Can I Help My Children?' (Solantaus & Ringbom 2002) was written for parents.

It was encouraging to see that professionals were eager to learn about the plight of the children of the mentally ill. The media was active in making contact and eager to publish constructive articles and news about the topic. The lecture halls and workshops were always full, indicating an existing worry and concern for the children and their families: by the end of 2004, 3900 professionals had attended the information campaign. It seems that professionals had been worried about the patients' children but lacked any means to act. When information and methods were made available, the readiness to take up the work was remarkable.

The children of the mentally ill have been a neglected group also in other countries. *Effective Family Programme* has actively formed networks with professionals especially in the Nordic countries. A three day workshop for the five Nordic countries will be organized in May 2005. *Effective Family Programme* will also be part of a European effort. The guide book for parents is being translated into Norwegian and Icelandic.

Development of intervention methods

The epidemiological findings are striking concerning the high risk for children with mentally ill parents. However, the other side of the coin is that development proceeds uninterruptedly in many children, if not in most. These resilient children can teach us what it is that protects children in family adversity. Research (Beardslee & Podorefsky 1988) has shown that understanding parental illness, engagement in age appropriate activities outside the family and investing in social relationships enhances children's resilience. Our own work (Solantaus et al 2003a, b) has also shown that children's responses to parental low mood can be linked with resilience or psychopathology. Preventive

interventions aim at supporting healthy responses in children and protective processes in families.

Effective Family Programme investigates two preventive interventions. The first one called 'Let's Talk About Children', is a short, 1–2 session intervention for parents. It was developed within *Effective Family Programme*. The second one is the *Beardslee Preventive Family Intervention*, developed by Dr. Beardslee in the USA (Beardslee et al 2003, Solantaus & Beardslee 1996.) It is manualized into 6–8 sessions and aims at supporting family understanding and children's social life outside the family. The guide book (Solantaus & Ringbom 2002) completes the interventions and is given to all parents. It serves as a preparatory guide for the intervention discussions.

The Beardslee Family Intervention manual was translated into Finnish and logbooks were written of both interventions.

The aim of the interventions is to give parents information on how to be effective parents even with mental problems and how to support children's outside-of-home activities. Because many children are likely to have problems, the aim of the interventions is also to map the children's development together with the parent and to ascertain whether the children and families receive necessary services. The 'Let's Talk' -intervention is based on psycho-education, while the family intervention includes the same cognitive material but in a more interactional context with the whole family present.

Training of clinicians and the involvement of clinics

Eighteen clinics from different parts of Finland initially joined *Effective Family Programme* and a training group for clinicians was established in 2001. In addition to the working methods, the training included the impact of parental illness on parenting and child development, children's needs, principles of prevention and promotion in general. These pioneering clinicians will be the key persons in their own area in the second phase of the implementation of the work.

The three-year training and supervision gave the trainees the competence to carry out the clinical interventions as well as to train others. To gain a master trainer status, each trainee had to bring five intervention cases for discussion to the group supervision and write a case report on one. The standards of fidelity were determined together with Dr. Beardslee, the developer of the intervention.

Research on the effectiveness of the interventions

A randomized study was designed to investigate the effectiveness of the interventions and their differential indications. The interventions are studies in real world situations, as part of clinical work with mental health patients in mental health and primary health centres. The study is ongoing.

Nine mental health clinics with 15 teams and one primary health centre agreed to participate in the study. Patients with affective illness and families with children aged between 8–16 are randomized to the two intervention groups after informed consent. The interventions are then delivered by trained clinicians. Logbooks of the interventions are used to ensure the fidelity of the interventions. The guidebook for parents is given to all families to complement the interventions.

The study is carried out by means of questionnaires. The history and state of mental problems in family members, parenting, parent-child relationships, family communication and children's social activities outside the home are inquired about by structured and open questions.

Family recruitment started in March 2002 and is ongoing. In early 2005, 90 families had been enrolled. The families are studied before the interventions, and at 4, 10 and 18 months afterwards. In addition, they are asked about their experiences of the interventions immediately after the interventions. The full data will be gathered in 2007. The results of the effectiveness of the intervention on the prevention of child mental disorders will have to wait until 2007.

Research on the safety and feasibility of the interventions

It is important that preventive measures do not cause significant harm. This is especially important when dealing with depressed individuals. Confidence in parenting is vulnerable in depression and so is one's self-confidence. It is important that discussions on children and parenting support the parents rather than undermine their self-confidence. Therefore, the safety and feasibility of the interventions was investigated preliminary in 16 families during the training of the clinicians, and then in the 14 first Beardslee Intervention families participating in the randomized study (Solantaus et al 2005, manuscript in preparation). The safety and feasibility are being compared between interventions (Solantaus & Toikka 2005, manuscript in preparation).

Responses were sought on the parents' satisfaction with the intervention, their experiences of possible harm, and the intervention's effects on illness-related feelings, parenting and family communication, as well as the parents' experiences of the working relationship. The preliminary results were very positive and encouraging. They suggest that the interventions are safe and feasible in the Finnish family and health care culture.

Implementation and institutionalization of the methods

The implementation of the child-centered methods has been a multilevel procedure. It has included mass media publicity, lectures and workshops for professional audiences, and focused training in the intervention methods. Every unit that agreed to participate in *Effective Family Programme* was offered free training and consultation to initiate the child-centered work. This process engaged the administration as well as the clinicians.

The clinics wanted to start using the interventions even before the study results were ready. An Institute of Medicine report (1994) states that in the matter of ethical principles, a preventive intervention can be scaled up if it has been shown to reduce risk and strengthen supportive

factors. The Beardslee Intervention meets these criteria (Beardslee et al 1993, 2003) and therefore, it can be implemented. The 'Let's Talk About Children' intervention, on the other hand, is designed to meet the minimum requirements of the Child Protection Law.

Implementation of the research arm of *Effective Family Programme* within the clinics turned out to be an effective implementation tool. Agreement to carry out the research implied that the interventions had to be adopted within clinical practice and carried out systematically with patients and their families. The research team has also paid a lot of attention to the clinics to ensure their perseverance and motivation in the study. Personal visits and communication via email and letters have linked the clinics into a functional network.

Implementation of the interventions has been successful as 4/5 university psychiatric clinics and 9/21 health districts are presently training their staff to use the child-centered methods. One university psychiatric clinic has included child-centered work as part of their good practice guidelines.

In addition to implementing the working methods, the training also needs to be implemented into the curricula of universities, polytechnics, and further education. *Effective Family Programme* has started negotiations in order to include the information on the needs of the children of the mentally ill and the working methods in the primary and further education of health care professionals.

The experience of *Effective Family Programme* highlights that implementation is an understudied and undervalued phase of development projects. It takes much more resources and time than it is usually expected and it warrants more research and theoretical underpinning.

Building a service network for families

Effective Family Interventions are intended to be part of a network of services. Every parent who uses the health care services because of mental

health problems in primary health and in psychiatric care should, in the coming years, receive the 'Let's Talk About Children' -intervention. In cases where the family is likely to benefit from the longer family intervention, it should also be provided. If there are concerns about children or aspects of parenting and family life, a network meeting with the family's own social network, social services and child psychiatric services is organized. The network meeting serves as a referral to the respected services.

Conclusions

Effective Family Program aims at providing health services with an evidence-based means for the promotion of development and prevention of disorders in children of mentally ill parents. In addition, it aims at implementing the methods in health care services and within training in basic and further education. It is a comprehensive development, research and implementation program. The aims are ambitious, but the program has been successful.

One of the main success factors is the joint research and clinical funding. The joint effort has made it possible to develop a special intervention (The Let's Talk -Intervention), to adopt the US-made intervention, to involve a number of clinics around the country and to train the clinicians to a degree of fidelity, as well as to study the safety and feasibility of the interventions and to build a research design for effectiveness research. It has also been important that the host and the funding organizations have a nationwide responsibility. This has made it possible for the EF Program to expand rapidly.

A further success factor is that *Effective Family Programme* introduced a topic – caring for the children of the mentally ill – that had high valence in the health care system. Concern for the children was there, but professionals lacked the means to act. There was social and clinical demand for the Effective Family work.

Programme has shown that implementation is a many level process. The program has been active in the public domain and in health care

organizations on a national and local level. It has provided training and supervision to grass-root clinicians and it has implemented the research program in the clinics. All these activities have contributed and been crucial to the success of the implementation. However, a great challenge lies ahead, as the preventive work has not been implemented in primary health care.

Effective Family Research is ongoing and its results are still to come. The data collection continues. It is challenging to maintain the motivation of the clinics and the families – as well as the funding bodies. The study will provide important clinical information on the interventions and their use. It will contribute to the understanding of the prevention of children's mental problems and provide empirical data for theory building.

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