QUESTION MODULE DESIGN TEAM (ESS ROUND 7) APPLICATION FORM FOR NEW MODULES[1]	
Please return this form by email to:	Mary Keane ess@city.ac.uk (PDF files only)
CLOSING DATE FOR APPLICATIONS: 17:00 hours UK Time on 1st May 2012	

USE THE ARROW KEYS TO NAVIGATE ROUND THE FORM

1. Principal Applicant *(person to whom all correspondence will be sent):*

Forename: Terje Andreas	**Surname:** Eikemo
Position: Associate Professor	
Department: Department of Sociology and Political Science	
Institution: Norwegian University of Science and Technology	
Full Address:	Norwegian University of Science and Technology Department of Sociology and Political Science Dragvoll University Campus 7491 Trondheim Norway
Tel No: + 4799034077	Email: terje.eikemo@svt.ntnu.no

2. Co-Applicants *(up to 4):*

(i) Forename: Johan P.	**Surname:** Mackenbach
Department: Department of Public Health	
Institution: Erasmus Medical Center Rotterdam	
Country: Netherlands	Email: j.mackenbach@erasmusmc.nl

(ii) Forename: Clare	**Surname:** Bambra
Department: Wolfson Research Institute for Health and Wellbeing	
Institution: Durham University	
Country: United Kingdom	Email: Clare.Bambra@durham.ac.uk

(iii) Forename: Olle	**Surname:** Lundberg
Department: Centre for Health Equity Studies	
Institution: Stockholm University / Karolinska institutet	
Country: Sweden	Email: Olle.Lundberg@chess.su.se

(iv) Forename: Tim	**Surname:** Huijts
Department: Department of Sociology	
Institution: Utrecht University	
Country: Netherlands	Email: t.h.m.huijts@uu.nl

[1] A totally new topic not previously fielded as a rotating module on the ESS OR a module that either uses a different approach entirely or which intends to repeat fewer than 66% of questions from an earlier module in an identical format

3. Proposed title of module *(max 80 characters):*

Social inequalities in health and their determinants

4. Abstract *(max 200 words*)

Health inequalities emerge in the intersection between social structures, individual actions and biological processes. While disease and premature mortality ultimately are biological phenomena taking place in individual bodies, social inequalities in ill health, disease and mortality are caused by socially determined conditions and processes of social inequality and stratification. Recently there has been a strong increase in the interest for health inequalities and how to tackle these, both among policymakers and in academia. A key element in this wave of interest is social determinants, in particular represented in the final report by the WHO Commission on Social Determinants in Health led by Michael Marmot (WHO 2008). Therefore, we suggest a ESS-wave, which can establish a comprehensive and comparative pan-European data set on the social determinants of health and health inequalities. The data will be used to compare the influence of different European policy regimes and to test theories of health and health inequalities for a range of health outcomes. More specifically, we suggest a wave which includes a range of health measurements (mental health, BMI, self-reported diagnoses) and social determinants (childhood conditions, working environment, psychosocial factors, and lifestyle factors).

5. Curriculum vitae

(Please provide a brief CV for each applicant, including subject expertise, questionnaire design and analysis experience, relevant publications and record of joint working – maximum one page per applicant.)

Principal Applicant:

Terje A. Eikemo holds a PhD in sociology. He is an Associate Professor at the Dept. of Sociology and Political Science at the Norwegian University of Science and Technology (NTNU) and a post doc at the Dept. of public health at Erasmus Medical Center Rotterdam (Erasmus MC). Eikemo is the project leader of the European commission sponsored project (EURO-GBD-SE) which has collected and harmonized mortality and survey data from the early 2000s in 25 European countries in order to estimate the potential for reduction of health inequalities in Europe. All co-applicants are involved in the project and have thus many years of collaborating experience. The project has 50 consortium members from all regions of Europe and is the successor the Eurothine project, which Eikemo (together with the co-applicants Mackenbach (Eurothine coordinator) and Lundberg) also participated in. He has extensive experience in utilizing the ESS, many of which are joint publications with the co-applicants. Since 2008 he has 14 international publications based on the two available health outcomes in the ESS. This includes 10 articles, 1 book and 3 book chapters and a review study of previous health studies that have used ESS data. Eikemo is a member of the Social Theory & Health editorial board, the Salute e Societa international editorial board, and a member of the European Society for Health and Medical Sociology (ESHMS) executive committee. Eikemo was awarded the scientific prize for young excellent researchers in the Humanities for 2009 by The Royal Norwegian Society of Sciences and Letters and the SINTEF prize for outstanding research in 2010. Both awards were given on the basis of his comparative ESS research.

Only international publications last 5 years with co-applicants and publications using ESS health data (marked**):

Federico, B., Mackenbach, J.P., Eikemo, TA, & Kunst A.E. (in press 2012). Impact of the 2005 smoke-free policy in Italy on prevalence, cessation and intensity of smoking in the overall population and by educational group. Addiction. --- Bambra, C & Eikemo, TA. (in press 2012). Job insecurity, unemployment and health. Oxford Handbook of Job Loss and Job Search.--- Huijts, T., Eikemo, T.A. & Skalicka, V. (2010). Income-related health inequalities in the Nordic countries: examining the role of education, occupational class, and age. Social Science & Medicine, 71, 1964- 1971. **--- Eikemo, T.A. (2010). The European Social Survey (ESS) and comparative health research. In: Giarelli, G. (Ed.), Comparative Research Methodologies in Health and Medical Sociology. (suppl 2, pp. 95-117): Salute & Società.** ---- Bambra, C., Gopal, N, & Eikemo, T.A. (2010). Welfare state regime life courses: The development of West European welfare state regimes and age related patterns of educational inequalities in self-reported health. International Journal of Health Services, 40(3), 399-420.**Abdul Karim, A, Eikemo, T.A., & Bambra, C. (2010) Welfare state regimes and population health: integrating the East Asian welfare states. Health Policy, 94(1), 45-53.---Grosse Frie, K., Eikemo, T.A., & Knesebeck, Ovd. (2010). Education and self-reported health-care seeking behaviour in different European welfare regimes. International Journal of Public Health, 55(3), 217-220.**--- Eikemo, T.A., Huisman, M., Perlman, F., & Ringdal, K. (2009). Educational health inequalities in former Yugoslavia. Evidence from the South-East European Social Survey Project. European Journal of Public Health, 19(5),452-453.**--- Eikemo, T.A., Skalicka, V, & Avendano, M. (2009). Variations in relative health inequalities: are they a mathematical artefact? International Journal for Equity in Health, 8(1), 32.**-- Huijts, T. & Eikemo, T.A. (2009). Causality, Selectivity or Artefacts? Why Socioeconomic Inequalities in Health are not Smallest in the Nordic Countries. European Journal of Public Health, 19(5), 452-3.----Bambra, C. & Eikemo, T.A. (2009). Welfare state regimes, unemployment and health: A comparative study of the relationship between unemployment and self-reported health in 23 European countries. Journal of Epidemiology and Community Health, 63, 92-98**---.Eikemo, T.A. (2009). Health inequalities in European welfare states. Saarbrucken: VDM Publishing House** --- Eikemo, T. A., & Bambra, C. (2008). The welfare state: a glossary for public health. Journal of Epidemiology and Community Health, 62, 3-6.**---Eikemo, T. A., Mastekaasa, A., & Ringdal, K. (2008). Health and happiness. In H. Ervasti (Ed.), Nordic social attitudes in a European perspective (pp. 48-63): Edward Elgar** ---Eikemo, T. A., Bambra, C., Judge, K., & Ringdal, K. (2008). Welfare state regimes and differences in self-perceived health in Europe: A multilevel analysis. Social Science & Medicine, 66(11), 2281-2295.**--- Eikemo, T. A., Huisman, M., Bambra, C., & Kunst, A. E. (2008). Health inequalities according to educational level in different welfare regimes: a comparison of 23 European countries. Sociology of Health & Illness, 30(4), 565-582.**---Eikemo, T. A., Kunst, A. E., Judge, K., & Mackenbach, J. P. (2008). Class related health inequalities are not larger in the East: A comparison of 4 European regions using the new European Socio-Economic Classification. Journal of Epidemiology and Community Health, 62(12), 1072-1078.**

Curriculum vitae (continued)*:*

Co-applicant 1:

Johan Mackenbach is Professor of Public Health and chair of the Department of Public Health at Erasmus MC, University Medical Center Rotterdam, the Netherlands. His research interests are in social epidemiology, medical demography, and health services research. He has (co-)authored around 450 papers in international, peer-reviewed scientific journals, as well as a number of books, and many book chapters and papers in Dutch-language journals. Until recently, he was the editor-in-chief of the European Journal of Public Health, and he has co-ordinated a number of international-comparative studies funded by the European Commission. He was the chair of the EU Working Group on Socio-economic Inequalities in Health. His current research focuses on socioeconomic inequalities in health, on issues related to aging and compression of morbidity, and on the effectiveness and quality of health services. He is actively engaged in exchanges between research and policy, among others as a member of several government advisory councils in the Netherlands (the Health Council and the Council for Public Health and Health Care). "He is Honorary Professor at the London School of Hygiene and Tropical medicine".

Selected publications (**ESS data)

Mackenbach JP. The English strategy to reduce health inequalities. Lancet 2010; 377(9782); 1986-1988

**Eikemo, T.A., Kunst, A.E., Judge, K. and Mackenbach, J.P. (2008) 'Class- related Health Inequalities are not Larger in the East: a Comparison of 4 European Regions Using the New European Socio-economic Classification', Journal of Epidemiology and Community Health 62: 1072-8.

Mackenbach JP, Stirbu I, Roskam AJ, Schaap M, Menvielle G, Leinsalu M, Kunst AE and the EU Working Group on Socioeconomic Inequalities in Health. Socioeconomic Inequalities in Health in 22 European Countries. N Engl J Med 2008; 23: 2468-2481

Dahl E, Fritzell J, Lahelma E, Martikainen P, Kunst A, Mackenbach J. Welfare regimes and health inequalities. In: Siegrist J, Marmot M (eds). Socioeconomic position and health: new evidence and policy implications. Oxford University Press 2006.

Mackenbach J, Martikainen P, Looman CWN, Dalstra JAA, Kunst AE, Lahelma E and members of the SedHA working group. The shape of the relationship between income and self-assessed health; an international study. International Journal of Epidemiology 2005 Apr;34(2):286-93

Mackenbach JP, Bakker MJ and the European Network on Interventions and Policies to Reduce Inequalities in Health. Tackling socioeconomic inequalities in health: an analysis of recent European experiences. Lancet 2003; 362: 1409-1414

Mackenbach JP, Kunst AE, Cavelaars AEJM, Groenhof F, Geurts JJM and the EU Working Group on Socioeconomic Inequalities in Health. Socioeconomic inequalities in morbidity and mortality in Western Europe. Lancet 1997; 349: 1655-1659

Curriculum vitae (continued)*:*

Co-applicant 2:

Clare Bambra holds a PhD in comparative social policy. She is a Professor of Public Health Policy and Director of the Wolfson Research Institute for Health and Wellbeing at Durham University, UK. Her research examines the effects of social policies on the social determinants of health and on health inequalities. She has extensive experience of using the ESS in the analysis of health and health inequalities which have resulted in joint publications with the co-applicants. She contributed to the EUROTHINE project and is currently contributing research to the European Union funded Marmot Review of health inequalities in Europe. She has published over 20 comparative studies. She also has experience of conducting cross-national research using national data sets including the Swedish Survey of Living Conditions and the Health Survey of England, as well as other EU-wide databases such as the European Survey of Working Conditions.

Relevant publications, * for ESS publications:

Bambra, C. (2011) Work, worklessness and the political economy of health. Oxford University Press.

Bambra, C. (2011) Health inequalities and welfare state regimes: Theoretical insights on a public health 'puzzle'. Journal of Epidemiology and Community Health, 65: 740-745.

Gelormino, E., Bambra, C., Spadea, T., Bellini, S., Costa, G. (2011) The effects of health care reforms on health inequalities: a review and analysis of the European evidence base. International Journal of Health Services, 41: 209-230.

*Bambra, C., Netuveli, G. and Eikemo, T. (2010) Welfare state regime life courses: The development of Western European welfare state regimes and age related patterns of educational inequalities in self-reported health. International Journal of Health Services, 40: 399–420.

Karim, SA., Eikemo, T.A., and Bambra, C. (2010) Welfare state regimes and population health: integrating the East Asian welfare states. Health Policy, 94: 45–53.

Bambra. C. (2009) Welfare state regimes and the political economy of health. Humanity and Society, 33: 99-117.

*Bambra, C. and Eikemo, T. (2009) Welfare state regimes, unemployment and health: A comparative study of the relationship between unemployment and self-reported health in 23 European countries. Journal of Epidemiology & Community Health, 63: 92-98.

Bambra, C., Pope, D., Swami, V., Stanistreet, D., Roskam, A. Kunst, A. and Scott-Samuel, A. (2009) Gender, health inequality and welfare state regimes: a cross-national study of thirteen European countries. Journal of Epidemiology & Community Health, 63: 38-44.

*Eikemo, T., Bambra, C., Joyce, K. and Dahl, E. (2008) Welfare state regimes and income related health inequalities: a comparison of 23 European countries. European Journal of Public Health 18: 593-599.

*Eikemo, T., Bambra, C., Judge, K., and Ringdal, K. (2008) Welfare state regimes and differences in self-perceived health in Europe: a multi-level analysis. Social Science and Medicine, 66: 2281-2295.

*Eikemo, T., Huisman, M., Bambra, C. and Kunst, A. (2008) Health inequalities according to educational level under different welfare regimes: a comparison of 23 European countries. Sociology of Health and Illness, 30: 565-582.

Bambra, C. (2007) Going Beyond the Three Worlds: Regime theory and public health research, Journal of Epidemiology & Community Health 61:1098-1102.

Bambra, C. (2007) Defamilisation and welfare state regimes: a cluster analysis, International Journal of Social Welfare, 16: 326-338.

Stanistreet, D., Swami, V., Pope, D., Bambra, C. and Scott-Samuel, A. (2007) Women's empowerment and violent death among women and men in Europe: An ecological study, The Journal of Men's Health and Gender, 4: 257-265.

Bambra, C. (2006) Decommodification and the worlds of welfare revisited, Journal of European Social Policy 16: 73-80.

Bambra, C. (2006) Health status and the worlds of welfare, Social Policy and Society 5: 53-62.

Curriculum vitae (continued)

Co-applicant 3 *(if applicable):*

Olle Lundberg has a PhD in Sociology, and is docent (Reader) in Sociology at Stockholm University and in Medical Sociology at University of Helsinki. He is Professor of Health Equity Studies and Director of CHESS. He has extensive experience of survey research from the Swedish Level of Living Surveys (LNU), including questionnaire design, fieldwork planning and supervision, data cleaning and documentation. His methodological work includes comparability of social class schemas, reliability of self-rated health measures and development ofa short version of the Sense of Coherence instrument. He has extensive experience in using the LNU and SWEOLD data, as well as the Survey of Living Conditions (ULF), for analyses of trends and inequalities in a broad range of living conditions, but in particular his focus has been on social determinants of health and health inequalities. He has a long experience in international comparative studies of health inequalities. His most recent work has focussed in the contribution of social policies for public health in developed countries.

Relevant expert appointments: [Member of the EU Working Group on Inequalities in Health, led by Professor Johan Mackenbach, Erasmus University, Rotterdam, 1993-.] [Member of the Research Network for Public Health Policy Strategies for Equity in Health at the National Institute for Public Health, 1996-2000]. [Member of the Working group on Social Relations and health under the National Public Health Commission, 1998-1999]. [Member, Expert group on inequalities in health, The Norwegian Directorate for Health and Social Affairs, 2005-2010]. [Member, priority committee for large databases, The Swedish Research Council, 2006-2010]. Member, Task Group 3: Social Protection, Review of Health Inequalities Post 2010 in England (Marmot Review), 2009]. [Member, WHO Task Force on ”Research priorities for equity in health”, 2009]. [Chair of the Research sub-group, WHO Scientific Resource Group on Health Equity Analysis and Research, 2010-]. [Chair, Task Group for GDP, Taxes, Income and Welfare, WHO European Review of Health Inequalities and the Health Divide, 2010-2012].

Relevant publications

Lundberg, O. 1986. "Class and Health: Comparing Britain and Sweden". Social Science & Medicine, vol 23, pp. 511-517.

Lundberg, O. 1991. "Childhood living conditions, health status and social mobility: A contribution to the health selection debate". European Sociological Review, vol 7, pp. 149-161.

Lundberg, O. & M. Nyström Peck. 1995. "A simplified way of measuring Sense of Coherence. Experiences from a population survey in Sweden". European Journal of Public Health, vol 5, pp. 56-59.

Lundberg, O. & K. Manderbacka. 1996. "Assessing reliability of a measure of self-rated health". Scandinavian Journal of Social medicine, vol 24, pp. 218-224.

Lundberg, O. & M. Thorslund. 1996. "Fieldwork and measurement considerations in surveys of the oldest old". Social Indicators Research, vol 37, pp. 165-187.

Lundberg, O. 1997. ”Childhood conditions, sense of coherence, social class and adult ill health: Exploring their theoretical and empirical relations”. Social Science & Medicine, vol 44, pp. 821-831.

Lahelma, E., K. Kivilä, E. Roos, T. Tuominen, E. Dahl, F. Diderichsen, J.I. Elstad, I. Lissau, O. Lundberg, O. Rahkonen, N.K. Rasmussen, M. Åberg Yngwe. 2002. “Analysing changes of health inequalities in the Nordic welfare states”. Soc Sci Med 55:609-625.

Palme, J., Å. Bergmark, O. Bäckman, F. Estrada, J. Fritzell, O. Lundberg, O. Sjöberg, M. Szebehely. 2002. “Welfare Trends in Sweden: Balancing the Books for the 1990s”. Journal of European Social Policy 12:329-346.

Fritzell, J and Lundberg, O. (eds.) 2007. Health Inequalities and Welfare resources: Continuity and change in Sweden. Bristol: Policy Press

Lundberg, O., Yngwe, M., Stjarne, M., Elstad, J., Ferrarini, T., Kangas, O., Norström, T., Palme, J., Fritzell, J., for the NEWS Nordic Expert Group (2008). The role of welfare state principles and generosity in social policy programmes for public health: an international comparative study. Lancet, 372(9650), 1633-1640.

Åberg Yngwe M, Fritzell J, Kölegård ML, Lundberg O (eds.) 2010. Social policy and public health across the life course. International Journal of Social Welfare, 19 (suppl.).

Curriculum vitae (continued)

Co-applicant 4:

Tim Huijts is Assistant Professor at the Department of Sociology of Utrecht University, the Netherlands. He is also affiliated with the Interuniversity Center for Social Science Theory and Methodology (ICS). He obtained a PhD (cum laude) from Radboud University Nijmegen for a thesis on social inequalities in health from a cross-national perspective. He has extensive experience in cross-national comparative health research, especially using the ESS data. To date, this has resulted in 10 international publications with the ESS data. He has published several ESS articles with co-applicant Terje Andreas Eikemo, and is currently preparing several new joint articles. With co-applicant Clare Bambra and Sarah van de Velde from Ghent University, he has worked on an article on gender equity and depression in Europe (current status: revise and resubmit). He was also involved in the European commission sponsored EURO-GBD-SE project, which was coordinated by main applicant Johan Mackenbach and co-applicant Terje Andreas Eikemo.

Relevant publications (** = based on the ESS data)

Huijts, T. & Kraaykamp, G. (2012). Formal and informal social capital and self-rated health in Europe: a new test of accumulation and compensation mechanisms using a multilevel perspective. Forthcoming in Acta Sociologica. **

Gesthuizen, M., Huijts, T., & Kraaykamp, G. (2012). Explaining health marginalization of the lower educated: the role of cross-national variations in health expenditure and labor market conditions. Forthcoming in Sociology of Health and Illness. **

Huijts, T., Subramanian, S.V. & Kraaykamp, G. (2012). Childlessness and psychological well-being in context: a multilevel study on 24 European countries. Forthcoming in European Sociological Review. **

Huijts, T. & Kraaykamp, G. (2012). Immigrants' health in Europe: a cross-classified multilevel approach to examine origin country, destination country, and community effects. International Migration Review, 46, 101-137. **

Huijts, T. & Kraaykamp, G. (2011). Marital status, national marital status composition, and self-assessed health. European Societies, 13, 279-305. **

Huijts, T. & Kraaykamp, G. (2011). Religious involvement, religious context, and self-assessed health in Europe. Journal of Health and Social Behavior, 52, 91-106. **

Huijts, T. (2011). Social ties and health in Europe. Individual associations, cross-national variations, and contextual explanations. Nijmegen: Radboud University Nijmegen. **

Huijts, T., Eikemo, T.A. & Skalicka, V. (2010). Income-related health inequalities in the Nordic countries: examining the role of education, occupational class, and age. Social Science & Medicine, 71, 1964-1972. **

Huijts, T., Perkins, J.M. & Subramanian, S.V. (2010). Political regimes, political ideology, and self-rated health in Europe: a multilevel analysis. PLoS One, http://dx.plos.org/10.1371/journal.pone.00011711. **

Huijts, T., Monden, C.W.S. & Kraaykamp, G. (2010). Education, educational heterogamy,and self-assessed health in Europe. European Sociological Review, 26, 261-276. **

Subramanian, S.V., Huijts, T. & Avendano, M. (2010). Self-reported health assessments in the 2002 World Health Survey: how do they correlate with education? Bulletin of the World Health Organization, 88, 131-138.

Subramanian, S.V., Huijts, T. & Perkins, J.M. (2009). Association between political ideology and health in Europe. European Journal of Public Health, 19, 455-457. **

Huijts, T. & Eikemo, T.A. (2009). Causality, selectivity or artefacts? Why socioeconomic inequalities in health are not smallest in the Nordic countries. European Journal of Public Health, 19, 452-453.

Avendano, M., Huijts, T. & Subramanian, S.V. (2009). RE: "Are Americans feeling less healthy? The puzzle of trends in self-rated health". American Journal of Epidemiology, 170, 1581-1582.

Module proposal – for NEW Modules

PART 1: Theory behind proposed module

The current application aims at introducing a health module into the ESS. The overall objective is to establish a module that can examine the variation of a range of health outcomes in European welfare states and their political, social, material, life course-related, behavioural, and psychosocial influences. It will also add to recent efforts in mapping the health effects of the economic transition in Eastern and Central Europe.

The European Social Survey is ideal for this perspective because political, social, and material variables already exist in the survey. However, by including behavioural, life-course related and psychosocial health determinants together with an extensive set of health outcomes, the ESS will strengthen its position tremendously as the main data source for European cross-national analyses of health inequalities. The co-applicants of this proposal derive from the fields of political science, sociology, medicine, and health policy and have already published dozens of articles in high-ranked journals using the two available health variables currently available in the ESS. However, a broader set of health determinants and more nuanced health outcomes in particular are urgently needed to further develop a cross-national macrosociology of population health. In this proposal, we have specifically chosen previously validated indicators which we know from empirical evidence will capture cross-national differences in health outcomes.

Social inequalities in health continue to be a key public health problem in European countries (Siegrist & Marmot, 2006, p. 27). Not only are social inequalities in morbidity and mortality reported in many European countries (Mackenbach, 2005); they are in fact found to be substantial in all countries with available data (Kunst, 2007). Comparative approaches to inequalities in health are important for at least two reasons. First, they are central to establish the nature of health inequalities – are such inequalities a universal phenomenon or something specific for certain stages of development or historical periods? Second, and more importantly, systematic international comparisons form the basis for one of the key questions in health inequality research, namely whether or not it is possible to organize society, or welfare states, in a way that reduces or even eradicates health inequalities. The concept of welfare state regimes has therefore been increasingly used by political scientists and health sociologists to analyse cross-national differences in population health. These studies have invariably all concluded that population health is enhanced by the relatively generous and universal welfare provision of the Social Democratic Scandinavian countries (Bambra, 2006a; Chung & Muntaner, 2007; Coburn, 2004; Navarro et al., 2003; Navarro et al., 2006). Although it is widely acknowledged that welfare states are important determinants of health as they mediate the extent, and impact, of socio-economic position on health (Bambra, 2006a; Chung & Muntaner, 2007; Coburn, 2004; Navarro et al., 2003; Navarro et al., 2006), there is an urgent need to expand our knowledge with comparable data on health determinants and more refined health outcomes for a large number of European countries. Earlier comparative studies have suffered from important weaknesses such as a small number of countries included and serious comparability problems.

Four major practical applications of the results of this application are foreseen: (1) The ESS data will provide information on the major social determinants of health (some of which are already included in the main ESS modules) on which interventions and policies should focus in order to reduce health inequalities in Europe. Such information is at the moment fragmentary and only available for a few countries. By expanding this knowledge-base, data from the ESS will support the development of packages of essential policies and interventions for tackling inequalities in health. For example, this data will potentially become the main source for prevalence data in European contributions to future Global Burden of Disease studies. (2) We will be able to quantify the magnitude of social inequalities in health between European welfare states for an extensive number of health outcomes, which will add importantly to the available studies on self-reported general health and limiting longstanding illness. (3) We will be able to assess the contribution of a unique selection of major health determinants (social, political, material, behavioral, life-course-related, and psychosocial determinants) to inequalities in health between European welfare states for an extensive number of health outcomes. (4) We will be able to make comparisons of the magnitude of social inequalities between European welfare

state regimes, with a view to assessing the scope for reducing these inequalities between and within European countries. If we were able to find systematic variations of the magnitude of (social) inequalities in health for a (large and complementing) range of health outcomes between countries sharing similar welfare policies, we could therefore provide policy makers with important tools for reducing the extent of health inequalities both within and between countries.

Health, health inequality and social determinants

Definitions of health have changed over time: its etymological roots lie in the Old English for 'whole' implying that a person who is healthy is 'whole'. The World Health Organisation attempts to encompass this in its 1948 definition of health as "*a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity"*. In contemporary Western societies, several competing theories of health co-exist (Seedhouse, 1986): Health as an ideal state; health as a personal strength or ability; health as physical and mental fitness to do socialised tasks; health as a commodity; and health as the foundation for achievement of potentials. Nadoo & Wills (2000) suggest that in the West a gradual shift in the meaning of health occurred during the 18th century as the increasing dominance of medicine encouraged a mechanistic view of the body. In this mechanical/medical conceptualisation, health is simply the absence of disease, and ill health is the presence of disease. The causation of disease presence or non-presence, and hence of a state of ill health or health, is thus atomised and examined at the level of the individual. However, population health arises from the complex interactions of individual, environmental, material and social relations (Dahlgren and Whitehead, 1991). In short, the level of health experienced or attainable by an individual, community or population is a direct result of the interaction and quality of the relationship between the various biological and social determinants of health (Marmot and Wilkinson, 2006).

Health inequality

The term "health inequality" is usually used to refer to the systematic differences in health which exist between socio-economic classes or groups (although there are other inequalities for example by gender or race). Health inequality can be defined in a purely descriptive way. For example, Kawachi and colleagues refer to health inequality as "*a term used to designate differences, variations, and disparities in the health achievements of individuals and groups*" (Kawachi et al, 2002). More commonly though, the moral and ethical dimensions of the term are emphasised: inequalities in health are thereby "*systematic differences in health between different socio-economic groups within a society. As they are socially produced, they are potentially avoidable and widely considered unacceptable in a civilised society*" (Whitehead, 2007). Inequalities in health between socio-economic groups are not restricted to differences between the most privileged groups and the most disadvantaged; health inequalities exist across the entire social gradient (Marmot, 2006). The social gradient in health is not confined to the poorest in society, it runs from the top to the bottom of society and *"even comfortably off people somewhere in the middle tend to have poorer health than those above them"* (Marmot, 2006). Socio-economic inequalities in health are universal within European countries and they extend along the whole social ladder: *"the higher the social position, the better the health"* (Lundberg and Lahelma, 2001). Health inequalities are thus not *"natural"* or *"inevitable"*; they are socially distributed and socially determined. John H. Goldthorpe represents the neo-weberian class theory and draws the line between manual and non-manual workers (Goldthorpe, 1997). The *Erikson-Goldthorpe class schema* is arguably one of the most influential conceptualisation of occupational class in European sociology, which is designed to distinguish positions within the labour market (Erikson & Goldthorpe, 1992) and has also been extensively used by the co-applicants in previous ESS health publications (see for example Eikemo & Bambra, 2008). With the new *European Socioeconomic Classification* (ESeC) problems of comparability have now been addressed to a much larger extent than in any previous occupational class scheme. The ESeC classification classifies people according to their positions within labour markets and production units, with special attention to their employment relations. The ESeC is designed to facilitate international overviews and cross-national comparisons across the EU.

Social determinants of health

The social determinants of health are the wider cultural, psychosocial, and material conditions in which people work and live (Marmot and Wilkinson, 2006). These are what social epidemiologists refer to as the 'causes of the causes' (Marmot, 2006). The main social determinants of health are widely considered to be: access to essential goods and services (specifically water and sanitation, and food); housing and the living environment; 'lifestyle' factors; access to health care; unemployment and social security; working conditions; and transport (Dahlgren and Whitehead, 1991). This is demonstrated in figure 1.

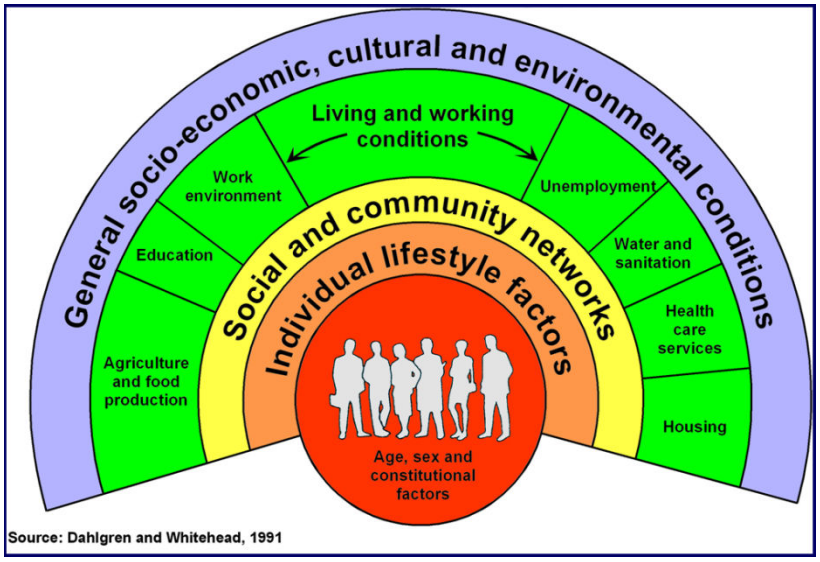

Figure 1: Dahlgren and Whitehead (1991) model of the determinants of health

Access to essential goods and services

Access to clean water and hygienic sanitation systems are the most basic prerequisites for good public health. In the advanced capitalist democracies, access to water and sanitation were amongst the first major public health reforms of 19th century Europe, although it was often only with the slum clearances and the advent of the post-war welfare state that access became universal. Agricultural policies affect the quality, quantity, price, and availability of food, all of which are important for public health (Dahlgren et al, 1996). While overall increases in life expectancy may be partly attributed to better nutrition, increases in the prevalence of obesity in many countries points to the contribution food policies also make to over-nutrition. Obesity is associated with an increased risk of disease (e.g. diabetes, heart disease) and premature mortality (Robertson et al, 1996). Rates of obesity are higher amongst lower socio-economic groups. Access to healthy food is often restricted by what have been termed 'obesogenic environments': geographic areas (usually low income areas) with little access to fresh fruit and vegetables, high access to high fat fast foods combined with low access to green space or sports facilities in terms of exercise (Lake and Townshend, 2006).

Housing and the living environment

Housing has long been recognised as an important material determinant of health and health concerns underpinned the slum clearances that accompanied the advent of the post-war welfare state. Housing which is damp can lead to breathing diseases such as asthma; infested housing leads to the rapid spread of infectious diseases; overcrowding can also result in higher infection rates, and it is also associated with an increased prevalence of household accidents. Housing which is expensive (e.g. as a result of high rents) can also indirectly have a negative effect on health as expenditure in other areas (such as diet) is reduced (Stafford and McCarthy, 2006). The wider living environment is also an important determinant of population health. In the past, environmental issues tended to focus on pollution from factories. However, more recently psychosocial concerns such as crime levels leading to stress and fear (as well as preventing people from exercising or walking) or the negative reputation of deprived areas resulting in the

poor self-esteem of the inhabitants, have also become recognised as potentially important influences on health.

Lifestyle factors

In addition to diet, smoking, alcohol and physical activity are considered to be the other lifestyle factors which are important determinants of health. They are referred as lifestyle factors because there is to some extent an element of choice around participation in these health damaging activities, however constrained the choice may be by the other social determinants. Smoking remains the most important preventable cause of mortality in the advanced capitalist world (Jarvis and Wardle, 2006). Alcohol related deaths and diseases are on the increase, and drugs are an increasingly important determinant of death amongst the young. Physical inactivity is recognized as a major independent risk factor for chronic non-communicable diseases. Also, regular physical activity can help prevent and reduce obesity and maintain a healthy weight (Hill and Wyatt, 2005). Risky health behaviours such as these are more prevalent amongst lower socio-economic groups and the causes of this are hotly debated and politically charged: are they 'free' choices or constrained and limited?

Access to health care

Access to health care is a fundamental determinant of health, particularly in terms of the treatment of pre-exciting conditions. In most advanced capitalist countries, access to health care is universal. However, there are variations in terms of how health care is funded (e.g. social insurance, private insurance or general taxation), the role and level of co-payments for treatment, and the extent of provision – what has been collectively termed 'health care decommodification' (Bambra, 2005). Provision can vary within countries. For example, in the nationalised UK health system, it has long been the case that an 'inverse care law' operates whereby there are less doctors in areas of higher need (Tudor-Hart, 1971). People in lower socio-economic groups are also less likely to access health care services than those in higher socio-economic groups with the same health need.

Unemployment and Social Security

Unemployment is associated with an increased likelihood of morbidity and mortality. There are clear relationships between unemployment and increased risk of poor mental health and parasuicide, higher rates of all cause and specific causes of mortality, self reported health and limiting long term illness, and, in some studies, a higher prevalence of risky health behaviours (particularly amongst young men), including problematic alcohol use and smoking (Bartley et al, 2006). The negative health experiences of unemployment are not limited to the unemployed only but also extend to families and the wider community (Novo et al, 2001). Links between unemployment and poorer health have conventionally been explained through two inter-related concepts: the material consequences of unemployment (e.g. wage loss and resulting changes in access to essential goods and services), and the psychosocial effects of unemployment (e.g. stigma, isolation and loss of self-worth). Lower socio-economic groups are disproportionately at risk of unemployment and it is a key determinant of the social gradient in health (Popham and Bambra, 2010). The relationship between unemployment and health varies across Europe as demonstrated a study utilising ESS data (Bambra and Eikemo, 2009).

Working conditions

The physical work environment can impact negatively on physical health via exposure to dangerous substances (e.g. lead, asbestos, mining, mercury etc) or via physical load and ergonomic problems. Epidemiological research has also found a relationship between the psychosocial work environment, work related stress and inequalities in health status (Marmot et al, 2006). The Demand-Control-Support model suggests that high work demands and low job control increase work-related stress, and that social support from colleagues and supervisors might mediate this relationship. The Effort-Reward Imbalance model focuses on the stress resulting from differences between the effort put into to a job and the rewards gained. Work related stress is associated with increased rates of heart disease, depression and sickness

absence (Marmot et al, 2006). It is considered to be a major determinant of health inequalities (Marmot et al, 1991). How work is organised through, for example shift work, hours of work or job insecurity, is also important for population health.

Explanations of health and health inequalities

Traditionally, three main theories which attempt to explain how social determinants interact with health and inequalities in health have been stressed: cultural-behavioural, material and psychosocial. More recently, however, a theory of fundamental causes has received some support.

Cultural-Behavioural

The cultural-behavioural approach asserts that the link between socio-economic status and health is a result of differences between socio-economic groups in terms of their health related behaviour: smoking rates, alcohol and drug consumption, dietary intake, physical activity levels, risky sexual behaviour, and health service usage. Such differences in health behaviour, it is argued, are themselves a consequence of disadvantage and unhealthy behaviours may be more culturally acceptable amongst lower socio-economic groups. The 'hard' version of the cultural-behavioural approach asserts that the differences in health between socio-economic groups are wholly accounted for by differences in these unhealthy behaviours. The 'softer' version posits that behaviour is a contributory factor to the social gradient but not the entire explanation (MacIntyre, 1997). Risky health behaviours are more concentrated amongst poorer socio-economic groups due to the concentration of individuals with less self-control, lower responsibility, poorer coping abilities, lower health knowledge, and a more short term outlook on life: an agency focused explanation which can be summed up as the 'feckless poor' argument. A more recent version of the behavioural model (the cultural-behavioural approach) takes into consideration the more structural role of culture and how different cultural norms can pattern the distribution of unhealthy behaviours. Unhealthy behaviours are more common in lower socio-economic groups where these behaviours represent the cultural norm and are more acceptable. The cultural-behavioural explanation does not take into account possible wider reasons for why unhealthy behaviours are more prevalent and/or more acceptable in lower socio-economic groups, namely the social determinants of health and other more structural factors such as the experience of deprivation and feelings of powerlessness. Simplistic behavioural explanations therefore merely lend authority to policies which stigmatise already disadvantaged individuals and communities (Joyce and Bambra, 2010). Cultural health capital is also relevant in this perspective, which Cockerham (1997) explains with the following logic: the further up a social hierarchy a person is located the less exposure to health-effecting stressors. They will also have access to, more social and psychological resources in the event of experiencing such stressors.

Materialist

The materialist explanation focuses on income, and the neo-materialist approach on what income enables, in the relationship between socio-economic status and health. Important dimensions of what income enables include access to goods and services and the limitation of exposures to physical, and psychosocial, risk factors. By way of illustration, a decent income enables access to health care, transport, an adequate diet, quality housing and opportunities for social participation; all of which are health promoting. Material wealth also enables people to limit their exposures to known risk factors for disease such as physical hazards at work or adverse environmental exposures. Materialist approaches give primacy to structure in their explanation of health and health inequalities, looking beyond individual level factors (agency), in favour of the role of public policy and services such as schools, transport and welfare in the social patterning of inequality (Bartley, 2004; Skalická et al., 2009). Cross national comparisons demonstrate the importance of material factors on health and health inequalities (Bartley, 2004). In general, countries with narrower income differences between rich and poor have better health and wellbeing e.g. obesity, drug misuse, teenage conceptions, stress, mental ill health (Wilkinson and Pickett, 2009). These countries also have better welfare services and so

access to education, social housing, transport, health care provision and green spaces tend to be better and more fairly distributed across the population. This may partly account for how lower income inequality translates into better health outcomes (Bartley, 2004). This evidence augments the theory that everyone does better in conditions where income equality exists. However, data from recent ESS studies does not suggest that relative health inequalities are smaller in more equal countries and this has been a particular challenge for the materialist approach (Eikemo et al, 2008a, 2008b).

Psychosocial

Psychosocial explanations focus on how social inequality makes people feel and the effects of the biological consequences of these feelings on health. Bartley describes how feelings of subordination or inferiority stimulate stress responses which can have long term consequences for physical and mental health especially when they are prolonged (chronic) (Bartley, 2004). The socio-economic gradient is therefore explained by the unequal social distribution of psychosocial risk factors. Psychosocial risk factors associated with the workplace include low levels of control over how work is undertaken, limited autonomy over work tasks, monotonous work and time pressures, low levels of support from co-workers and supervisors, an imbalance between efforts exerted and rewards received and organisational injustice (Marmot et al, 2006). Bartley underscores how it is the way stress makes people feel that is important in relation to health outcomes rather than straightforward exposures to stressors. In this way the model combines both structure and agency. For example, it may not simply be income level or an adequate working environment alone that leads to good health but rather how good income and good quality work can make people feel, especially in relation to others (Bartley, 2004). Here perceptions of social status and in particular perceptions of status in comparison to other people in society are significant constructs: what matters is how individuals value themselves. If these value judgements are negative, feelings of inferiority or subordination can invoke harmful stress responses.

Fundamental causes

The discussion of the influence of the social determinants above reflects the dominant model within cross-national health research, which stems from social-epidemiological research. This model is particularly useful because it does not consider health to be primarily a product of individual action, but rather stresses the complex social determinants behind the inequalities. However, it is not fully satisfactory as a sociological model because it does not consider that the social distribution of health is also a result of how individuals actively form their own life chances and not only the result of the social context in which individuals live. This is the core of the fundamental cause theory. Link and Phelan (1995) developed the theory of fundamental causes to explain why the association between social status and mortality. They proposed that the enduring association results because social status embodies an array of resources, such as money, knowledge, prestige, power, and beneficial social connections that protect health no matter what mechanisms are relevant at any given time (Link & Phelan 1995). According to the authors, a fundamental social cause of health inequalities has four essential features. First, it influences multiple disease outcomes, meaning that it is not limited to only one or a few diseases or health problems. Second, it affects these disease outcomes through multiple risk factors. Third, it involves access to resources that can be used to avoid risks or to minimize the consequences of disease once it occurs. Finally, the association between a fundamental cause and health is reproduced over time via the replacement of intervening mechanisms. It is the persistent association of SES with overall health in the face of dramatic changes in mechanisms linking SES and health that led Link and Phelan to call SES a “fundamental” cause of health inequalities.

Tackling inequalities in health

Health inequalities emerge in the intersection between social structures, individual actions and biological processes. While disease and premature mortality ultimately are biological phenomena taking place in individual bodies, social inequalities in ill health, disease and mortality are caused by socially determined conditions and processes of social inequality and stratification.

Recently there has been a strong increase in the interest for health inequalities and how to tackle these, both among policymakers and in academia. A key element in this wave of interest is social determinants, in particular represented in the final report by the WHO Commission on Social Determinants in Health led by Michael Marmot (WHO 2008). Here, the roots of health inequalities are placed in *"…the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness"*. In other words, our health will depend on a range of circumstances and conditions throughout our lives, including childhood condition, education, working conditions, economic resources and housing conditions. Thereby the key social determinants of health also constitute the welfare resources necessary to lead a good life, following Johansson's (1970) definition of *welfare* as *"the resources … by which the individual can control and consciously direct her conditions of life."*

Many of these welfare resources are generated within the families or in the market. In addition to such individual resources there are also collective resources generated through welfare state institutions. These resources are intended to assist citizens with *"…the collective matters that arise from the demands and possibilities that all individuals in all societies are facing during the life cycle"* (Johansson 1979:56). In other words, in all societies people will be faced with the challenge to get an education and means to support themselves, to find job and somewhere to live, to raise and support a family, to care for their children and older relatives, and so on.

The collective resources can thus be divided in two major groups, 'cash' and 'care', where the former include social insurances covering income loss due to for example illness, unemployment and old age. More recent programmes also include family policies. The latter category comprises welfare services provided free of charge or heavily subsidised, for example child care, health care and care for the old and the disabled.

From a public health point of view it is reasonable to believe that the supply and quality of collective resources provided through welfare policies are important for people's possibilities to sustain their health and wellbeing. And the importance of these resources is likely to be more important among people with smaller incomes and more unfavourable living conditions. The less you have in terms of individual resources, the more important it will be that you are able to draw on collective resources, and that means that welfare policies that provide more generous transfers and better quality services are likely to improve public health and reduce health inequalities. In order to address questions concerning social determinants of health and how they might be modified by welfare state institutions and other social conditions, comparative data is needed.

Module Objectives

Objective 1: Establish a comprehensive and comparative pan-European data set on the social determinants of health and health inequalities

In 2005 the World Health Organisation set up a 'Commission on the Social Determinants of Health' which systematically examined the contribution of the social determinants to health inequalities within and between countries. Since publication of its final report in 2008, various national governments have commissioned similar reports (such as the Marmot Review of Health Inequalities in England, Marmot 2010), as has the European Union. The social determinants of health and health inequalities have therefore become increasingly recognised as of significance to population health. However, there is little by way of comprehensive pan-European data on the social determinants of health, or on a range of health outcomes. Currently, the ESS contains data on a limited number of social determinant variables (e.g unemployment, income etc), and only two inter-related health outcomes (self-rated health and limiting long term illness). Beyond the ESS, a large EU funded study on health inequalities (the Eurothine programme www.eurothine.org) combined various national health surveys and mortality data sets from across a number of European countries. However, although extensive, this study was limited by issues of data comparability (particularly in terms of large variations in the range of health outcomes provided by each national survey), as well as by limited country coverage (e.g. occupational data was available for only 8 countries and regional data had to be used for Italy and Spain, Mackenbach et al, 2008). The proposed module will provide a more comprehensive and comparable data set, for a wider range of European countries. The ESS may become the main source of health and health determinant data in such large European projects and within comparative health research in general. For example, the successor of the Eurothine, the EURO-GBD-SE project (www.EURO-GBD-SE.eu) utilizes data on income and social participation from the ESS.

Objective 2: Use the data set to compare the influence of different European policy regimes

Further, it has been increasingly recognised by European governments that those interventions which positively change the social determinants can improve health and reduce health inequalities. However, all the official reports have highlighted the lack of evidence to support how to intervene to improve health inequalities (e.g. WHO, 2008; Marmot, 2010). Of course, one way to do this is to commission more experimental evaluations of interventions. Another is to conduct more "natural experiments" of existing policies and interventions, by comparing different countries. The proposed ESS module of the social determinants of health and health inequalities will help in achieving this objective by creating and making publicly available a comprehensive and comparable pan-European data set on the social determinants of health, which includes a wide range of health outcomes. The influence of different European policy arrangements (policy regimes) on health and health inequalities can then be compared (*objective 2*). Additionally, as the proposed module includes a range of validated mental and physical health outcomes then such comparisons will be more extensive and specific than previous ones using ESS data (Eikemo et al, 2008a-e; Huijts, 2011).

Objective 3: Test theories of health and health inequalities for a range of health outcomes

In addition, the proposed module will help researchers to examine and compare the influence of the social determinants of health, with the intention of testing the relative empirical contribution of the different models of health and health inequalities (cultural-behavioural, material and psychosocial), and how this might vary by country and policy context (*objective 3*). It has not been possible to do this on a pan-European scale before, although some work has been done using the Norwegian HUNT study (Skalicka et al, 2009). Establishing which of the models is most influential on various health outcomes across different European countries is important in terms of thinking about priorities for policy actions to improve population health and/or reduce health inequalities.

Previous ESS health publications by the applicants

We have seen an increasing use of data from the ESS in comparative health research in the last few years. Since the first ESS health article was published in 2004 and until 2009, twenty-one studies had used the ESS for health-comparative analyses between countries (Eikemo, 2010). Fourteen of these studies had been conducted by the (co-) applicants of the suggested rotating module (67%) as first authors, while most other studies were performed by close colleagues or with at least one co-applicant as co-author. This clearly demonstrates the general interest of the applicants in the ESS. Moreover, the articles are published in high-ranked journals. After 2010, the co-applicants have published 14 international high-ranked ESS articles (see CVs). It is therefore safe to guarantee several important publications from the same research group given an accepted module application. Clearly, this is only possible if the ESS expands its scope with respect to health outcomes in particular and their determinants in general, because we have seen a tendency the last couple of years that other surveys (especially the European Survey of Working Conditions and SHARE) have started to replace the ESS due to an over-usage of the currently available health outcome questions in the ESS. This trend is likely to turn if the proposal is accepted.

If approved, we would like to submit a methodological article, preferably in collaboration with the CCT, about the new module (if supported) to a high-ranked journal (to expand the knowledge about the new module and the survey as such) and we will arrange a special session on ESS health data at the first upcoming European Society for Health and Medical Sociology (ESHMS) congress with the aim of publishing special-issues in Social Science & Medicine and Social Theory & Health to which the ESHMS is affiliated.

The proposal is of importance also because ESS publications of the co-applicants have so far identified important cross-country variations of health (including medication compliance, doctor consultation and depression) inequalities by various indicators of socio-economic position (or by other indicators that are not typically linked to status, such as religious attendance, political ideology, or social capital) between European countries. A key result from these studies is that fundamental inequalities continue to exist according to many socio-economic indicators in the Nordic countries despite high living standards and egalitarian policies (Eikemo, 2010). Our proposed health survey will certainly contribute to the explanation of this paradoxical finding in particular and on the variations of health inequalities between European countries and welfare state (regimes) and regions in general. Furthermore, the proposed module will add to recent efforts in mapping the health effects of the economic transition in Eastern and Central Europe. We already know that mortality rate ratios are more than twice the size in the Central-East as compared to the West and that mortality rates (for all educational groups) are larger in the East (Mackenbach et al. 2008). Furthermore, people in the Central-East report poorer general health and more cases of limiting longstanding illness as compared to other European countries (Eikemo, 2008c). By introducing a more refined set of health outcomes with political, social, material, psychosocial and behavioral variables, we may reach closer to an understanding. For example, it has been reported that the alcohol consumption is the main factor behind the large mortality rates in the Central-East (Mackenbach et al., 2008). It will be interesting to see whether these findings can be reproduced in a survey which also includes a larger set of underlying social factors which, partly because of insufficient data availability, may have been ignored in the past.

Outline of suggested variables (see further description in part 3)

Health measurement

Two questions on people's self-perceived health are included in the biannual core modules in the ESS are: *self-rated health (SRH)* and *limiting longstanding illness (LLI)*. We suggest the following additional health measurements:

1) Self-reported diagnoses (10 questions)
2) Measured weight and height (body mass index, 1 question)
3) Depressive symptoms (as applied in ESS round 3, 8 questions)

Health determinants

Social determinants of health (SDoH) include a range of resources and conditions throughout the course of life. Some of these are covered in the basic part of ESS (such as education, income, social class, and social capital), other SDoH are included in the suggested Module.

4) Childhood conditions (3 questions)
5) Working conditions (3 questions)
6) Psychosocial conditions (3 questions)
7) Life-style factors:
    a) Alcohol (3 questions)
    b) Tobacco (2 questions)
    c) Physical activity (4 questions)
    d) Fruit and vegetable consumption (2 questions)
8) Health care utilization (3 questions)

The proposed module has 42 items. These will eventually be cut down to a maximum of 30 items in collaboration the CCT.

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PART 3: Proposed module design

Health measurements

1) Self-reported diagnoses

Socioeconomic inequalities are reported for morbidity. Higher prevalences are indeed reported among people from low SES for a large range of diseases. High blood pressure, musculoskeletal disorders or diabetes among others are more prevalent among people from low SES (Melchior 2006, Roper 2001). High blood pressure has been recently shown to largely contribute to differences in mortality between eight social groups in the US (Danaei 2010). Moreover, not only the prevalence of the disease differs by SES, also the severity of the disease does. Among people with diabetes, low SES appears to increase the risk of morbidity and mortality (Ropper 2001, Bachmann 2003). That is why we suggest asking for a selected number of diseases whether people had been diagnosed with this disease and whether people are limited in their usual activities because of this disease. These diagnoses are not always very prevalent, but they would be suitable for pooled European analyses. In the EURO-GBD-SE project, comparable mortality rates have been collected for 36 causes of death all parts of Europe (which can be stratified into social position, sex, and age), which will enable a precise estimation of expected prevalences for the below suggested conditions. These mortality rates cannot be presented here, but can be utilized in the selection process together with the CCT.

Have you ever been diagnosed with any of these following conditions? (YES-NO)

1) Problems with arms or hands (include arthritis or rheumatism)
2) Problems with legs or feet (include arthritis or rheumatism)
3) Problems with back or neck (include arthritis or rheumatism)
Note: 1-3 can be collapsed into 1 question.
4) Heart, or circulation problems, such as high blood pressure (include stroke with longstanding consequences)
5) Allergy, such as rhinitis, eye inflammation, dermatitis, food allergy or other (allergic asthma included)
6) Breathing problems (include asthma or chronic bronchitis; exclude allergic reactions such as allergic asthma)
7) Stomach, liver, kidney or digestive problems (exclude allergic reactions)
8) Skin conditions (include severe disfigurement; exclude allergic reactions, such as dermatitis)
9) Diabetes
10) Other cancers (malignant tumour, also including leukemia and lymphoma)
Note: Lung cancer may have to be measured separately
11) Epilepsy (include fits)
12) Severe headaches (such as migraine)

Some of these questions have been asked in several international surveys such as the Multi-country survey study conducted by the WHO and in the European Health and Social Integration Survey (EHSIS).

2) Self-reported BMI

We suggest including questions on **weight and height** to obtain BMI. As pointed out in part 1, obesity is associated with an increased risk of disease (e.g. diabetes, heart disease) and premature mortality (Robertson et al, 2006).

What is your body mass index (weight, kg)/(height, m)^2?
Calculated by interviewer

3) Depressive symptoms

Depression is currently one of the leading causes of disability in the world, which may result in an increased burden on healthy life years (Murray & Lopez 1997).

Depression scales are among the oldest, the most widely used, and also most validated mental health measures used in health surveys. Most of the scales have been thoroughly validated an have been used in numerous studies in many countries (McDowell, 2006). The Center for Epidemiological Studies Depression Scale (CES-D) in one of the very few developed specially for survey use (McDowell, 2006, Radloff, 1977). The CES-D was developed in the 1970's to measure the frequency of depressive symptoms in the general population and was designed for inclusion in surveys (Radloff, 1977). The CES-D has become a standard measure of depression among adults. It is considered to be one of the best survey instruments for identifying depression (McDowell, 2006). However, the CES-D does not assess severity of depression in a manner relevant to diagnosis or clinical assessment.

The items of the CES-D have a longer history than the measure itself, they were selected from previously validated depression scales. With exploratory factor analytic techniques, Radloff (1977) found that the full (20-item) CES-D has four factors: depressed affect, positive affect, somatic complaints, and interpersonal problems. The traditional method of scoring the CES-D is to assign each item a value from zero to three, with a response of "none of the time" counting as 0, "some of the time" counting as 1, "most of the time" counting as 2, and "all of the time" counting as 3. The items worded in the positive direction are reverse-scored. The items are then summed to yield a total score ranging from 0 to 60. Often, a summary score above a certain cut-off point is computed to indicate a probable case of depressive disorder. The accuracy or the cut-off point has been discussed and it may need to be altered for use in different cultures (McDowell, 2006).

Shorter subscales of the CES-D are frequently used due to interview time constraints or to reduce response burden. However, these subscales are not identical and there seems little agreement over which shortened version should become standard (McDowell, 2006).

In the ESS round 3, an 8-item CES-D scale was included. The same 8-item CES-D has also been included in ELSA and SHARE. Using data from ESS round 3, Bracke et al investigated the psychometric properties of this 8-item CES-D within Europe. They concluded that the 8-item CES-D can be considered a reliable and valid measurement instrument for depression within the European context, and allows comparisons of observed means across countries (Bracke et al, 2008; Missine & Bracke, 2012). Because of these results and for comparisons with ESS round 3, we would suggest to include this 8-item CES-D.

Items of original CES-D. "How often during the past week...." Items marked bold are part of the 8-item CES-D scale

1. I was bothered by things that don't usually bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with the help of my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
14. I felt lonely.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people disliked me.
20. I could not get "going".

Social determinants

Social determinants of health (SDoH) include a range of resources and conditions throughout the course of life. Some of these are covered in the basic part of ESS, other SDoH are included in the suggested Module.

4) Childhood conditions

Inequalities in health are intertwined with social inequalities in a number of living conditions throughout the course of life. The position in the social structure at each point in time is linked to health, and the accumulated time in lower social positions constitute a good summary measure of life-time "exposure" to adverse conditions. Over and above that, however, adverse living conditions during different periods of the life course affect health (Braveman & Barclay 2009; Galobardes, Lynch & Davey Smith 2004; Lundberg 1993, 1997; Shaw & Krause 2002; Wadsworth & Kuh, 1997). It is of particular interest that social and material conditions during childhood can have both independent effects on health in adult and later life (Elstad 2005; Lundberg, 1993, 1997; Turell et al 2007), as well as be part of the social stratification process (Lundberg 1991).

The key questions on childhood conditions include economic as well as social circumstances during upbringing, typically up to age 16. They can include direct descriptions of these conditions (Where you experiencing economic difficulties during your upbringing), or descriptions of the circumstances in terms of family structure, housing conditions or parental social class (Lundberg 1991, 1993; Fors et al.)

5) **Did you live with your natural (biological) parents during your whole childhood, i.e. up to age 16? (YES-NO)**
6) **Was there any serious dissension or friction in your family while you were growing up? (YES-UNCERTAIN-NO)**
7) **Did your family experience economic hardship while you were growing up? (YES-NO)**

5) Working conditions

Working life remains as one of the most important spheres of life for people's health, but complicated ways. Work provides economic resources and a range of other rewards that are crucial for healthy, but at the same time adverse working conditions are still an important source for poor health and a major driving force behind health inequalities (Benach, Muntaner, Santan et al. 2007). Even today, large parts of the work force are exposed to harmful physical working conditions in all European countries, although the variation across nations is large (Lundberg, Hemmingsson & Hogstedt 2007). There is a range of working conditions of importance for health, but the most important include heavy lifts, bent or otherwise unsuitable work postures, noise and exposure to dust, smoke or toxic substances. Such conditions are directly linked to musculoskeletal disorder, hearing problems, respiratory problems and specific diseases, but can also affect psychological health through stress (Cox et al. 2000).

In addition, the psychosocial work environment has proven to be important for health. In the classic demand-control model introduced by Robert Karasek (Karasek 1979; Karasek & Theorell 1990) the focus is placed on the job strain that results from the combination of high demands and low control. The model has been consistently related to a range of health outcomes, including mortality (e.g. Belkic et al 2004; Vermulen & Mustard 2000; de Jonge, Bosma et al 2000), although not necessarily in all occupational groups (de Jonge, Dollard et al 2000). It is also unclear to what extent demand-control variations contribute to inequalities in health (Lundberg 1991).

Other approaches to the psychosocial dimensions of work include the effort-reward model proposed by Johannes Siegrist (Siegrist et al 1986; Siegrist 1996). This model includes several components, but the basic idea is that an imbalance between (high) efforts put in by an employee and (low) rewards from the employer will result in strain and poor health among employees. While part of the model has received substantial support (van Vegchel et al 2005), there are still several unresolved issues that would need cross-national comparisons to be addressed properly.

In sum, therefore, a cross-European focus on social determinants of health and health inequalities requires information of key work environment factors, including both physical and psycho-social work hazards. Given the limited space we will have to focus on a few indicators only, and while this is quite easy to do for the physical demands of importance it will be more difficult to capture both demand-control and effort-reword with a few questionnaire items. We will therefore most likely focus on the former of these constructs.

WORK/LIFE BALANCE

Q41 In general, do your working hours fit in with your family or social commitments outside work very well, well, not very well or not at all well?
1 - Very well
2 - Well
3 - Not very well
4 - Not at all well
8 – Don't know
9 - Refusal

DEMANDS
Q45 And, does your job involve

– working at very high speed
- working to tight deadlines

1All of the time
2Almost all of the time
3Around ¾ of the time
4Around half of the time
5Around ¼ of the time
6Almost never
7Never
8DK
9 Refusal

CONTROL
Q50 Are you able to choose or change … ?

A – your order of tasks YES/NO (Don't know/Refusal)
B – your methods of work YES/NO (Don't know/Refusal)
C – your speed or rate of work YES/NO (Don't know/Refusal)

SUPPORT

Q51 For each of the following statements, please select the response which best describes your work situation.

–Your colleagues help and support
you

- Your manager helps and supports
you

1 Always,
2 Most of the time,
3 Sometimes,
4 Rarely,
5 Never,
8 Don't Know,
9 Refusal,
7 Not Applicable

6) Psychosocial factors

As argued above, SDoH include a range of resources and conditions during the whole life course. But these resources, whether economic or social, do not automatically transform into a good life or a good health – resources have to be used, and they can be used more or less efficiently. Amartya Sen (1985, 1992) has touched on this when differing between 'functionings' and 'capabilities,' where the latter refer to the possibilities to achieve the conditions one desire. But while Sen is mainly concerned with external obstacles to achieve the life one strives for, such as lack of personal freedom or arenas where to use one's resources, here the focus will be on the internal, personal obstacles, or capabilities that affect the way resources are used. Therefore, differences in health between individuals and groups will depend on the amount of resources at their disposal, but even at a given level of resources, differences in health are likely to be found. These differences will in turn depend on the way people perceive, interpret, and react to everyday hassles and demands. Hence, a concept that captures these internal processes will help us to better understand how economic and social conditions are transformed into poor health and premature mortality.

Sense of coherence (SOC) is one important concept that captures these relations between resources and their use. SOC expresses a generalized set of beliefs about oneself and about one's world, and these beliefs influence one's appraisal of a stressful situation and one's resource mobilization in such a given situation. SOC is defined as a dispositional orientation in which the internal and external environments are seen, to a greater or lesser extent, as comprehensible (the cognitive component of SOC that refers to whether stressors are seen as predictable and coherent), manageable (the instrumental component of SOC that refers to the sense that available resources are adequate to deal with stressors), and meaningful (the motivational component of SOC that determines if stressors are significant and worth of investment). These three components of SOC are interrelated, and all of them are needed for successful coping. To put it bluntly, those who know what to do in a stressful situation, know that they are able to do this and are motivated to do it will handle the situation better and run a greater chance to remain healthy.

The three dimensions can be measured accurately by a three-item version SOC-instrument developed for the Swedish Level of Living Survey. This instrument has proven valid and reliable (Lundberg & Nyström Peck 1995) independently related to poor health (Lundberg & Nyström Peck 1994) and biomarkers of health (Lindfors, Lundberg & Lundberg 2004). It has also been shown that SOC, measured this way, can act as a modifier of other health risks, e.g. working conditions (Toivanen 2007). The three-item scale has been successfully used also in other countries, where it has been linked to subsequent mortality independent from biological and social conditions at start of follow-up (Surtees et al 2003; Surtees, Wainwright & Khaw 2006).

In addition to SOC a key psychosocial component is the role of social comparisons and relative deprivation. While relative deprivation has been brought forward as an important mechanism for remaining inequalities in health in affluent societies, surprisingly little has been done in order to understand how and in what ways such consequences of social comparisons can operate. Previous attempts to study relative deprivation and health have mainly focussed on income and the consequences of having a smaller income than an objectively defined comparison group (Åberg Yngwe et al 2003; Åberg Yngwe et al 2005). Other attempts, using consumption norms, have proven interesting but have also produced different gender differences (Åberg Yngwe, Lundberg & Burström 2006; Åberg Yngwe & Lundberg 2007). This, in turn, may suggest that men and women make different types of social comparisons that also have different implications for their health. However, such conclusions need to be systematically addressed in a comparative perspective in order to be better understood.

- Now I would like to ask three questions about how you think and feel.

1) Do you usually see a solution to problems and difficulties that other people find hopeless?
2) Do you usually feel that your daily life is a source of personal satisfaction?
3) Do you usually feel that things that happen to you in your daily life are hard to understand?

Answers are indicated in a 3-point response format including "yes, usually," scored as 0, "yes sometimes," scored as 1, and "no," scored as 2.

7) Life style factors

According to the WHO, excessive alcohol consumption, smoking, lack of physical activity, and insufficient consumption of fruit and vegetables are among the risk factors recognized as contributing to the world-wide noncommunicable disease burden (Murray & Lopez, 1996). Rather surprisingly, no European Survey has been able to implement the 'big four' into the same survey. While comprehensive evidence on the socioeconomic distribution of alcohol and fruit- and vegetable consumption is lacking entirely in Europe, evidence on smoking and physical activity are limited because of harmonization problems between surveys, lack of countries, and validated social stratification variables. This came out of the recent EURO-GBD-SE project, which has evaluated prevalence data of 84 known risk factors (www.euro-gbd-se.eu). An inclusion of these four risk factors is urgently needed in order to provide health researchers (including the Global Burden of Disease) with sufficient and comparable data to evaluate the contribution of known risk factors to health, not only in related to the health outcomes in this proposal, but also to mortality using population attributable fractions. The EURO-GBD-SE project group, which consists partly of co-applicants of this proposal, has extensive experience in harmonizing and validating these variables. The project has assigned different experts to each risk factor, and these are willing to assist in the next phase of the questionnaire planning if needed.

a) Alcohol

According to the World Health Organization, alcohol consumption is a leading risk factor for mortality and morbidity related to both intentional and unintentional injury. In 2000, 16.2% of deaths and 13.2% of disability-adjusted life years (DALYs) from injuries were estimated to be attributed to alcohol in the entire world (Cherpitel C. Et.al, 2009). Heavy drinking and alcohol abuse or dependence are common problems in most European countries, and result in substantial suffering, mortality and economic costs. Injuries attributable to alcohol are a growing concern form a public health perspective, as alcohol related injuries such as traffic accidents, burns, poisonings, falls and drowning make up more than a third of the disease burden attributable to alcohol consumption. The World Health Organization estimates that 2.3 million premature deaths occur every year as a result of harmful alcohol use (Cherpitel C. Et.al, 2009). The impact of alcohol affects not only those who are intoxicated at the time of injury, but also those who are direct victims of their behaviour. In addition, heavy alcohol drinking has substantial psychological, social and family consequences that extend beyond the individual.

Despite the relevance of alcohol as a risk factor for mortality, there is limited understanding of how alcohol consumption is related to social and economic factors, and how this varies across European countries. Patterns of alcohol consumption vary enormously across Europe. For example, moderate wine drinking is common in the Southern Mediterranean countries, where alcohol has historically been consumed during meals. In contrast, The Nordic European countries have historically been characterized by higher levels of binge drinking. Furthermore,

excessive alcohol consumption is not equally distributed within a society. Research indicates that there is a strong social gradient in excessive alcohol consumption, which contributes substantially to social inequalities in health and mortality. For example, it is estimated that up to a third of excess mortality in the lower socioeconomic groups in Finland could be attributable to alcohol consumption.

We propose to incorporate the measurement of alcohol consumption as part of the new module on health and behaviour for the European Social Survey (ESS). This is not only important given the major burden attributable to alcohol from a public health perspective, but also because alcohol patterns are socially and culturally determined, and the way alcohol relates to social, economic and employment variables is likely to differ substantially across countries. In addition, alcohol policies targeted to altering alcohol consumption patterns differ enormously across Europe. Through cross-nationally comparative data on alcohol, researchers will be able to examine how alcohol policies may have an impact on overall alcohol consumption patterns.

Recently, the World Health Organization has developed and validated an instrument to measure alcohol consumption, particularly focused on identifying hazardous or harmful alcohol use. The Alcohol Use Disorders Identification Test (AUDIT) is a 10-item screening questionnaire with 3 questions on the amount and frequency of drinking, 3 questions on alcohol dependence, and 4 on problems caused by alcohol. The AUDIT instrument was developed to assess alcohol dependence, adverse alcohol drinking, and adverse consequences of alcohol use. *Hazardous drinking* refers to a pattern of consumption that increases the risk of harmful consequences for the user or others. *Harmful use* refers to alcohol consumption that leads to substantial physical and mental health consequences. *Alcohol dependence* refers to a cluster of behavioural, cognitive and physiological reactions that may develop after repeated alcohol use, and that include strong desire to consume alcohol, impaired control over consumption, persistence in drinking despite harmful consequences, a higher priority given to drinking than other activities, increased alcohol tolerance, and physical withdrawal symptoms is alcohol is discontinued (Babor, T., 2001). The AUDIT instrument comprehensively assesses all these dimensions of alcohol drinking behaviour, and has become a major tool for assessing alcohol consumption in several countries.

The AUDIT instrument has been translated to a variety of languages, and a manual is available for its use. The instrument has been validated in many different contexts, and has shown high reliability and good psychometric properties (Allen, JP., 2001; Reinert, D.F. 2007). The AUDIT questionnaire is available from the World Health Organization without copyright fee. Attached to this proposal is the 10-item version of the AUDIT instrument that we propose to include as part of the rotating module of the ESS.

A shorter version of the instrument, the AUDIT-C (which is a 3-item version) was developed to meet the challenge of brevity and ease of administration in broader settings. The AUDIT-C has been shown to have very good properties, and to perform almost as well as the 10-item AUDIT questionnaire to assess both, heavy/hazardous drinking and alcohol abuse or dependence (Bush et al. 1998).

1. **How often did you have a drink containing alcohol in the past year? Consider a "drink" to be a can or bottle of beer, a glass of wine, a wine cooler, or one cocktail or a shot of hard liquor (like scotch, gin, or vodka). Response options were never; monthly or less; 2 to 4 times a month; 2 to 3 times a week; 4 to 5 times a week; or 6 or more times a week.**
2. **How many drinks did you have on a typical day when you were drinking in the past year? Response options were 0 drinks; 1 to 2 drinks; 3 to 4 drinks; 5 to 6 drinks; 7 to 9 drinks; or 10 or more drinks.**
3. **How often did you have 6 or more drinks on one occasion in the past year? Response options were never; less than monthly; monthly; weekly; or daily or almost daily**

One could also ask the questions similar to the SHARE study, where they use a different reference period (last 3 months). This is more specific and less affected by recall bias. Also, in SHARE there is an additional question "Have you ever drunk alcoholic beverages" yes/no. By adding this question we could differentiate between non and ex-drinkers, as ex-drinkers are often very different from non-drinkers with respect to health.

b) Tobacco

Tobacco is widely recognized as one of the most prominent causes of morbidity and premature mortality in Western Europe and North America. Each year, tobacco is responsible for approximately one fifth of all deaths (Danaei et al., 2009). Tobacco smoking is associated with an elevated risk of ischemic heart disease, hypertension, cardiovascular diseases, respiratory diseases, and multiple forms of cancer. Additionally, passive smoking (i.e., inhalation of smoke) is related to a heightened risk of lung cancer.

Although the association between smoking and morbidity and mortality is well-established, less is known about the social determinants of smoking, and variation in smoking behaviour across European countries. A study by Cavelaars et al. (2000) demonstrated that there are marked differences in the prevalence of smoking, as well as educational differences in smoking behaviour, across Europe. This implies that smoking is strongly driven by social and cultural determinants. Most notably, differences in the prevalence of smoking between educational groups appeared to be particularly large in Northern Europe, and smallest in Southern Europe. Among Southern European women, the higher educated even appeared to smoke more than the lower educated. An article examining the trend in the educational gradient in smoking between 1985 and 2000 revealed that in most European countries the educational differences in smoking converge towards the pattern observed in the Northern European countries (Giskes et al., 2005). This implies that an increasingly selective group of Europeans from the lower socioeconomic strata will be affected by smoking-related diseases in the next few decades.

However, this earlier work on the social determinants of smoking in Europe was based on data that were not fully comparable; information on both smoking behaviour and the social background of respondents was collected through different survey questions and through different sampling designs. Moreover, most studies only included data from a limited number of Western European countries. In order to achieve an adequate and comprehensive comparison of smoking behaviour and the social determinants of smoking across Europe, it is crucial to gather comparable data on a large number of countries in both Western and Eastern Europe simultaneously.

Additionally, examining smoking behaviour in a large number of European countries would allow researchers to investigate the impact and effectiveness of smoking-related policies. Recently, several European countries have implemented smoking bans in public places. Furthermore, strong efforts have been made to keep youngsters from starting smoking (e.g., by obliging cigarette producers to place warnings on cigarette packs, and by increasing taxes on tobacco), and to encourage adults to quit smoking (e.g., by large media campaigns). By comparing multiple European countries, scholars will be able to assess the impact of these policies on smoking behaviour.

In sum, given the large impact of tobacco smoking on morbidity and mortality, and the considerable insights that could be gained from comparing the social determinants of smoking across a large number of European countries, we suggest to include measures of smoking behaviour in the new module on the social determinants of health for the ESS. In order to fully measure developments in smoking behaviour and the impact of smoking-related policies across social groups, it is crucial to include measures of respondents' current smoking behaviour, as

well as measures of smoking behaviour in the past. Therefore, we intend to ask respondents the following question.

- Do you smoke (cigarettes, pipes or cigars)?

1) Yes, but less than 10 cigarettes or equivalent per day
2) Yes, (NO "but)" 10 or more cigarettes or equivalent per day
3) No, "but I used to smoke in the past"
4) No, I "never smoked"
- How many years have you been smoking (cigarettes, pipes or cigars) altogether?

c) Physical activity

The activity status of people has changed dramatically in the last decades. With the economic and industrial development in the last century physically demanding work got fewer and more and more sedentary (mostly sitting) jobs emerged. Insufficient physical activity is associated with a number of health outcomes, such as ischemic hart disease, breast cancer, colorectal cancer and diabetes as well as falls and osteoporosis, osteoarthritis, lower back pain and prostate cancer (Ezzati et al. 2006). The World Health Organization estimates that 3.3% of mortality and morbidity worldwide are caused by insufficient physical activity. Thus, at least 2 million deaths and 20 million DALYs could be prevented, given an effective promotion of physical activity (Bull et al. 2004).

However, data on physical activity are not easily available in many countries. Especially data on activities across the different domains of work, domestic, transport and leisure time are lacking. Thus, estimating the magnitude of negative health outcomes promoted by insufficient activity is difficult. An international comparison of activity status and related health outcomes is even more complicated, as comparable data is hardly available.

Physical activity was formerly described as "planned, structured and repetitive bodily movement done to improve or maintain one or more components of physical fitness" (Caspersen and Stephens 1994). But this definition, focussed only on activities outside the work or leisure time, was found not to be sufficient. Blair and colleagues found, a positive effect of less intensive physical activities (e.g., Blair and Jackson 2001). Nowadays, efforts are undertaken to improve moderate intensive activities - cycling, quick walking or swimming - rather than focussing of high intensive activities (Bull et al. 2004).

The International Physical Activity Questionnaire (IPAQ) is an instrument to assess total physical activity and sedentary behaviour (see also: http://www.ipaq.ki.se). It is not only focussing on activity outside work but combines the domains of work, domestic, transport and leisure time. It was conducted on the one hand to have a good measure of activity status and on the other hand being internationally comparable. It is publically available and easy to implement into questionnaires. A long and a short version were conducted. The short version, containing 7 questions, is a good instrument to be implemented into international surveys and has shown good reliability and moderate criterion validity (Craig et al. 2003).

We propose to incorporate the measurement of physical activity as part of the new module on health and behaviour for the European Social Survey (ESS). This is not only important given burden attributable to insufficient activity from a public health perspective, but also because levels of activity are socially, economically and culturally determined. The way physical activity relates to social, economic and employment variables is likely to differ across countries. In addition, policies meant to enhance physical activity might differ across Europe. Through cross-nationally comparative data on physical activity, researchers will be able to examine how policies related to physical activity may have an impact on overall level of activity.

IPAQ asks about all the vigorous or moderate activities (more than 10 minutes at a time), time spent walking and sitting activity the respondent did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make one breathe much harder than normal. Moderate activities refer to activities that take moderate physical effort and make one breathe somewhat harder than normal. Walking includes at work and at home, walking to travel from place to place, and any other walking that might be done solely for recreation, sport, exercise, or leisure. Sitting includes time spent at work, at home, while doing course work and during leisure time and may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television. The Following questions are asked:

1. **During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling? (Days per week or no activity)**
2. **During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking. (Days per week or no activity)**
3. **During the last 7 days, on how many days did you walk for at least 10 minutes at a time? (Days per week or no activity)**
4. **During the last 7 days, how much time did you spend sitting on a week day? (Hours and minutes per day or no activity)**

d) Fruit and vegetable consumption

It is widely accepted that fruit and vegetables are important components of a healthy diet, and that their consumption help prevent a range of diseases. In particular, ischemic heart disease, ischemic stroke, colorectal cancer, stomach cancer, lung cancer, esophagus cancer and mouth & pharynx cancer belong to the major causes of death that are related to low fruit and vegetable intake (Ezzati et al., 2003). Empirical studies have analyzed fruit and vegetable consumption in a very detailed form. For example, they have analysed the effects of particular fruit and vegetable sorts on a specific cause of death (e.g. High intake of cruciferous vegetables may substantially reduce bladder cancer risk (Michaud et al., 1999). Recent work has focused on the promotion healthy life style in schools among teenagers and adolescents. In a review study, Ammerman et al. (2002) collected 22 studies reporting results for fruit and vegetable intake measured as either servings per day or in other units, such as fruit and vegetable consumption scores. 77 % of the studies could observe a significant effect in increasing fruit and vegetable intake. The increasing evidence that consumption of fruit and vegetables decreases the risk of several chronic diseases has created a firm basis for policy initiatives. However, knowledge of the actual intake distribution is needed for the strategies to be set up properly. Currently, no survey has measured fruit- and vegetable consumption in European representative populations which also contains valid measures of social stratification. Based on our experience with Eurothine and EURO-GBD-SE data, in which we have worked with harmonizing consumption data in Europe, we recommend the following questions:

1) **How often during the last week have you consumed fresh fruit or berries?**
2) **How often during the last week have you consumed fresh vegetables?**

- **daily or almost daily**
- **at least once a week**
- **never or almost never**

8) Health care utilization

Socioeconomic differences in the use of health care services have been widely reported. People in a lower socioeconomic position are less likely to use preventive health services (Veugelers and Yip 2003). Moreover they tend to be more intensive users of general practitioner while higher socioeconomic groups report significantly more specialist contacts, even when taking into account the generally poorer health of lower socioeconomic groups (Droomers and Westert 2004 van Doorslaer et al. 2004; Mielck et al. 2007). A number of possible reasons for such disparities have been suggested, including systematic differences by socioeconomic position in interpretation of symptoms an perception of the need for health care (Adamson et al 2003). However, only a few studies have been conducted to analyse such differences. For example, in the Netherlands a lower educational level has been found to be associated with a higher tendency to consult a doctor (van der Meer and Mackenbach 1998), and in the US lower socioeconomic groups were more likely to report that they would access medical care immediately in response to a clinical scenario (Adamson et al. 2003). It has also been shown with ESS data that there are systematic differences of people's health care seeking behavior between welfare states belonging to different welfare regimes (Grosse Frie et al., 2008). The co-applicants have extensive experience in this field. For example, Johan Mackenbach coordinates the AMIEHS project jointly with the London School of Hygiene & Tropical Medicine, which aims to develop a "new" list of indicators (causes of death) for which mortality rates are likely to reflect variations in the effectiveness of health care, with health care being limited to primary care, hospital care and personalized health services (www.amiehs.lshtm.ac.uk).

Perception of need for seeking primary health care was part of the 2nd wave of the ESS. It was measured by the reported tendency to consult a doctor in case of four hypothetical symptoms (very sore throat, serious headache, serious sleeping problems and serious backache). Respondents were asked to whom they would go first for advice or treatment. For every symptom there were eight answer categories: (1) nobody, (2) friends or family, (3) pharmacist/chemist/drugstore, (4) doctor, (5) nurse, (6) the internet/web, (7) a medical helpline and (8) other practitioner. Adding to our knowledge about the reversed social gradients with respect to GP and specialist seeking behavior, one question should therefore also be added as to whether the respondent has been treated by a specialist the last year. However, in our experience (Grosse Frie et al. 2008), this question only reflect health care use in hypothetical scenarios. To bring this field further, we need to ask about self-reported experiences of actual visits and hospitalizations. We therefore suggest to draw upon key questions from the European Community Household Panel, by asking about hospital admissions, the number of visits to a general practitioner or medical specialist over the previous 12 months, which we know have important variations in OECD countries (van Doorslaer et al. 2006).

1. **During the past 12 months, have you been admitted to a hospital as an in-patient?**
2. **During the past 12 months, about how many times have you consulted a general practitioner (including home visits by the doctor)?**
3. **During the past 12 months, about how many times have you consulted a medical specialist (including out-patient consultations but excluding any consultation during hospitalisation) ?**

An ESS health module will differentiate substantially from other health modules, such as the ISSP, the European Community Household Panel, Eurobarometer, European Health Interview Survey, the SHARE study, and the European Health and Social Integration Survey in many ways. First, the ESS covers all age groups (as opposed to SHARE) and the questions asked are also

relevant for all age groups. Second, many surveys such as the Eurobarometer do not have a satisfactory educational variable and a very small sample size. Third, no other survey can compete with the range of countries applied in the ESS. Finally and most importantly, while the other surveys are health surveys, the ESS is a social survey. By adding a range a of health questions into the ESS, we will be able to examine the contribution of extensively validated social and material indicators on health, the importance of political orientation, life-style factors (which until now is not streamlined into one European survey), life course (childhood conditions), health care use, working conditions and psychosocial conditions.

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PART 4: Methodological or Practical difficulties

The Measurement of alcohol consumption

Although several screening instruments have been developed to measure alcohol and to identify problematic drinking, one of the main challenges in alcohol research is cross-national comparability. Alcohol consumption is a complex behaviour and takes place differently in various cultural contexts. In addition, the ways individuals report alcohol consumption is culturally shaped and substantially compromises the comparability of responses to a single item across different countries. A second problem is that alcohol consumption is made up of three separate parts: Frequency, which refers to how often individuals consume alcohol; intensity, which refers to how much an individual drinks on each occasion; and binge drinking, which refers to drinking with the primary intention of becoming intoxicated through heavy alcohol consumption over a short period, although the actual number of drinks specified in the definition varies. While most studies succeed in examining frequency and to a lesser extent intensity, the measurement of binge drinking is more complex, and data obtained from several international surveys is often of poor cross-national comparability.