

JOINT SUBMISSION FROM SOCIAL AND PUBLIC HEALTH SCIENCES UNIT AND THE SCOTTISH COLLABORATION FOR PUBLIC HEALTH RESEARCH AND POLICY

We welcome the opportunity to respond to the Economy, Energy and Tourism Committee's inquiry, and particularly that they are interested in the health impacts of low quality work. To note: we talk about 'work' meaning paid employment, but recognise that there are other valuable types of work e.g. voluntary and caring, which should also be recognised. Our organisations (SPHSU and SCPHRP) aim to provide evidence to improve population health and wellbeing, and we are therefore coming from a public health point of view, and much of our response is backed up with evidence from the 'employment and health' literature.

What makes a job 'good' or 'bad'?

We may think of job quality as measured by occupational grade; for example there is a vast literature showing a gradient in health by social class, with the poorest health in non-skilled manual workers and the best health in 'professional' workers (1). This is an effective means of exploring issues of status and social class tensions. However, one issue with using such class groupings is that it masks the potential heterogeneity within socioeconomic strata (2) e.g. waiters vs. security guards; retail clerks vs. call-centre workers; or teachers vs. journalists. Even within distinct job types, there can be physical, psychosocial and pay differentials in the workplace. Therefore, it is very difficult to summarise job quality of different occupations without considering the components of each occupation. Within each occupation, the main drivers of differences will include job precariousness, pay and benefits, the physical work environment, the psychosocial work environment and different levels of employee representation (3). For any one occupation or job type, these drivers may vary between employers e.g. a zero-hours contract in a sports shop differs from a permanent retail assistant 'partner' in a department store. Additionally, it has to be considered that these characteristics and experiences are complex, dynamic, interactive and that they also occur in the context of more macro-level labour market and geo-political forces (4). It is perhaps not worthwhile, therefore, to classify one job type as 'good' or 'bad', but rather to consider the particular drivers of job quality within each individual job.

What are the health impacts of low quality jobs?

Theories of employment and health have emphasised that not everyone has a positive health experience when moving into employment and likewise not everyone has a negative health experience when moving out of employment. It has therefore been questioned whether all employment is good for health (5). One of the major caveats to the positive work-health relationship is the 'quality' of the work obtained. The potential for health benefits from moving into employment is likely to be dependent on the components of work that are mentioned above (what makes a job 'good' or 'bad'), as well as individual-level factors such as age and existing health status (6).

The current global labour market is characterised by more precarious employment than previously (7), borne out of a greater need for temporary and 'flexible' (also insecure) positions because of the economic and political changes that have affected the traditional job model of the 1970s (8). Precarious employment has been linked with decreases in both job satisfaction and positive psychosocial work environments, as well as increases in absenteeism, early retirement and occupational injuries (9). The exact mechanisms between precariousness and these health and occupational characteristics are obviously many in number, although many flow through changes in the psychosocial work

environment (e.g. increased demand and reduced control, increased stress etc.) and reductions in health and safety considerations in the workplace (physical work environment), as well as employees in precarious and insecure jobs experiencing lower pay and reduced benefits.

Lower incomes preclude people from purchasing health enhancing goods and services and participating fully in society, which may increase health risks and lower self-esteem and status (1). This can therefore result in a vicious cycle of lower incomes leading to poorer health, leading to less opportunity for earning more. Although the relationship is complex, higher income has been found to be consistently associated with better health outcomes (1). Research in many European countries has shown health benefits with increasing income from many European countries (10), and an association between income and mortality (11). Income is likely to be an important determinant of health, but the relationship is curvilinear, meaning that the health benefits of an increase in income are higher for those with lower income in the first place. Financial strain has been shown to explain around one third of the association between job loss and health.

The everyday workplace poses potential risks to employees in the form of chemical and biological toxins, heat, noise and physical injury. Despite decades of improvements in workplace safety, many of these hazards still exist (2). Jobs in the manufacturing, construction and agriculture industries account for one fifth of all jobs in Scotland (12), with these jobs typically encompassing some degree of chemical and/or physical hazard (2). Even the emerging industries in the service, finance and public administration sectors have risks in the form of increasing sedentary work and continued computer screen use. Although European workers remain as exposed to physical hazards as they did 20 years ago (13), the UK has seen the exposures to some hazards decrease in many modern workplaces (e.g. asbestos, tobacco, silica etc.) (14). In some industries, hazardous work is offset by increased wages and/or bonuses (e.g. oil industry), but these occupations and 'hazard premiums' are not commonplace (15). Within workplaces, higher-status jobs can also be associated with lower risk of hazards and/or demands, matching the social gradient in health (2).

The organisation of work is also relevant to health. For example, there is evidence that non-standard working patterns (e.g. shift work) are associated with an increased risk of various morbidities, including consistent associations with increased risk of coronary and cerebrovascular events (16) and gastrointestinal disturbances (17). There is increasing evidence of an association with impaired cognition (18, 19), and more mixed evidence linking shift work with an increased risk of cancer (20, 21); and mortality (22, 23). The mechanisms thought to link shift work with ill health are the disruption to circadian rhythms, sleep, work-life balance and the uptake of more negative behaviours (24). There is some evidence that reorganisation of working schedules can have a positive impact on employees' health (25).

One of the most common causes of absence from work is through trauma and bodily injury, largely sustained in the workplace (2). Musculoskeletal disorders made up 16% of Employment and Support Allowance claims in the UK in 2012 (26). Chemicals in the workplace (including coals, dusts, and fumes) have been found to be associated with an increased risk of respiratory disorders, including Chronic Obstructive Pulmonary Disease (27), reduced lung function (28) and asthma (29). Many of these chemical agents have also been linked with an increased risk of several cancers including lung, bladder and skin cancer (30). Finally, the other major morbidity studied in relation to employment conditions is cardiovascular disease. Many of the causal pathways between employment and CVD

have been posited as being psychosocial in nature, although there is evidence that exposure to heat (31) and noise also increases risk (32).

Psychosocial factors such as job demands and job control (a comparison of efforts and rewards (33)), relationships and social support at work are relevant to job quality. Job demands are factors of the job such as the amount of work that there is to be done, the time there is to do it, how hard it requires a person to work, and whether there are also conflicting demands. Control over performance at work is related to skill discretion and autonomy. Longitudinal evidence has shown psychosocial job quality as a risk factor for various measures of health, for example, cardiovascular disease (34), musculoskeletal conditions (35), mental health and self-rated health (36). Many studies have shown that high job demands, low job control and the combination of the two relate to increased odds of common mental disorders (37, 38). Poor work relationships, social support (37, 38), and job insecurity (39) have also been found to be predictive of mental health problems. A very recent (2015) review of prospective or controlled studies with 1-5 year follow-up concluded that there is sufficient evidence that work environment factors e.g. low job control, high job strain and bullying, lead to increasing depressive symptoms over time (40).

As well as considerable evidence on the relationship between job quality and health in employed populations there is some evidence (albeit, less) to show whether or how the health of people who are unemployed or out of the labour force differs from those who are in low and high-quality jobs. Cross-sectional research provides some evidence that sub-optimal working conditions are associated with similar or lower levels of poor health to unemployment, when compared to optimal working conditions. This does not rule out the possibility of health selection i.e. people may be in poorer quality jobs because they had poorer health in the first place, rather than the actual job being bad for their health. There is limited longitudinal research on this, however, studies from Australia provide some evidence that moving from unemployment into a low quality job (measured by job strain, job insecurity, and ability to get another job) can be worse for mental health than remaining unemployed (41, 42).

What can the Scottish Government and public policy makers do to improve job quality in Scotland?

UK policies have largely placed the emphasis on the individual and therefore on improving the quality of the supply of potential workers rather than improving the quality of the jobs available. One major limitation of having the policy concentration on the individual is that it takes little account of potential demand-side interventions to provide available, good quality employment. Action on demand-side issues is required, including a coherent industrial strategy focused on promoting high-skill and high-tech industries which provide good quality employment. A sustainable and equitable economy is built on the understanding and acceptance that all people in society deserve the opportunity to work and have an adequate standard of living. While the aim of any society should be for full and meaningful employment for all its citizens, achieving this through sustainable and equitable economic development is a challenge. Although even more challenging for a devolved administration that has limited role in welfare policy, improving employability for individuals is also linked to sectors that the Scottish Government has devolved powers for e.g. “access to quality education, skills development, better health care, and equitable access to resources” (43). Other structures and policies that may help drive this goal, which the Scottish Government could promote, include: employers paying a national, or even regional, living wage (compared to a minimum wage); more equitable pay structures/remuneration policies in both the public and private sector; financial incentives for the development and use of sustainable, green technologies and enterprises (e.g.

renewable energy) with linked modern apprenticeships and training; grants for low-income students to help attend higher education; and promoting changes in social attitudes towards benefits claimants through promotional campaigns and politicians refraining from using negative stereotypes about claimants (44).

References

1. Marmot M. 'Fair Society Healthy Lives' (The Marmot Review). London, UK2010.
2. Clougherty JE, Souza K, Cullen MR. Work and its role in shaping the social gradient in health. *Annals of the New York Academy of Sciences*. 2010 Feb;1186:102-24.
3. Robertson T EM, Jepson R, Muir G, Skivington K. The Nature of Employment and Excess Mortality in Glasgow and Scotland. Edinburgh: NHS Health Scotland 2015 (forthcoming).
4. Siegrist J, Benach J, McKnight A, Goldblatt P, Muntaner C. Employment arrangements, work conditions and health inequalities: Report on new evidence on health inequality reduction, produced by task group 2 for the strategic review of health inequalities post 2010. London, UK: Marmot Review2010.
5. Ezzy D. Subjectivity and the labour process: conceptualising 'good work'. *Sociology*. 1997;31:427.
6. Paul KI, Moser K. Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*. 2009;74(3):264-82.
7. Benach J, Muntaner C. Precarious employment and health: developing a research agenda. *Journal of epidemiology and community health*. 2007 Apr;61(4):276-7.
8. Hadden WC, Muntaner C, Benach J, Gimeno D, Benavides FG. A glossary for the social epidemiology of work organisation: part 3, terms from the sociology of labour markets. *Journal of epidemiology and community health*. 2007 Jan;61(1):6-8.
9. Benach J, Vives A, Amable M, Vanroelen C, Tarafa G, Muntaner C. Precarious employment: understanding an emerging social determinant of health. *Annual review of public health*. 2014;35:229-53.
10. Mackenbach JP, Martikainen P, Looman CW, Dalstra JA, Kunst AE, Lahelma E. The shape of the relationship between income and self-assessed health: an international study. *International Journal of Epidemiology* 2005;34(2):286-93.
11. Rehkopf DH, Berkman LF, Coull B, Krieger N. The non-linear risk of mortality by income level in a healthy population: US National Health and Nutrition Examination Survey mortality follow-up cohort, 1988-2001. *BMC public health*. 2008;8:383.
12. ONS. Annual Population Survey. 2014 [23/01/2014]; Available from: <https://www.nomisweb.co.uk/articles/676.aspx>.
13. European Foundation for the Improvement of Living and Working Conditions (Eurofound). Changes over time – First findings from the fifth European Working Conditions Survey. Dublin, Ireland2010.

14. Cherrie JW, Van Tongeren M, Semple S. Exposure to occupational carcinogens in great britain. *The Annals of occupational hygiene*. 2007 Nov;51(8):653-64.
15. Leigh JP. No evidence of compensating wages for occupational fatalities. *Industrial Relations*. 1991;30:382-95.
16. Frost P, Kolstad HA, Bonde JP. Shift work and the risk of ischemic heart disease - a systematic review of the epidemiologic evidence. *Scandinavian journal of work, environment & health*. 2009 May;35(3):163-79.
17. Knutsson A, Boggild H. Gastrointestinal disorders among shift workers. *Scandinavian journal of work, environment & health*. 2010 Mar;36(2):85-95.
18. Devore EE, Grodstein F, Schernhammer ES. Shift work and cognition in the Nurses' Health Study. *American journal of epidemiology*. 2013 Oct 15;178(8):1296-300.
19. Marquie JC, Tucker P, Folkard S, Gentil C, Ansiau D. Chronic effects of shift work on cognition: findings from the VISAT longitudinal study. *Occup Environ Med*. 2014 Nov 3.
20. Hansen J. Increased breast cancer risk among women who work predominantly at night. *Epidemiology*. 2001 Jan;12(1):74-7.
21. Jia Y, Lu Y, Wu K, Lin Q, Shen W, Zhu M, et al. Does night work increase the risk of breast cancer? A systematic review and meta-analysis of epidemiological studies. *Cancer Epidemiology*. 2013;37(3):197-206.
22. Taylor PJ, Pocock SJ. Mortality of shift and day workers 1956-68. *British journal of industrial medicine*. 1972 Apr;29(2):201-7.
23. Nätti J, Anttila T, Oinas T, Mustosmäki A. Night Work and Mortality: Prospective Study Among Finnish Employees Over the Time Span 1984 to 2008. *Chronobiology International*. 2012;29(5):601-9.
24. Knutsson A. Health disorders of shift workers. *Occup Med (Lond)*. 2003 Mar;53(2):103-8.
25. Bambra CL, Whitehead MM, Sowden AJ, Akers J, Petticrew MP. Shifting Schedules: The Health Effects of Reorganizing Shift Work. *American journal of preventive medicine*. 2008;34(5):427-34.e30.
26. McInnes R. ESA and incapacity benefit statistics SN01420. London, UK: House of Commons Library2012.
27. Nakadate T, Aizawa Y, Yagami T, Zheg YQ, Kotani M, Ishiwata K. Change in obstructive pulmonary function as a result of cumulative exposure to welding fumes as determined by magnetopneumography in Japanese arc welders. *Occup Environ Med*. 1998 Oct;55(10):673-7.
28. Kauffmann F, Drouet D, Lellouch J, Brille D. Occupational exposure and 12-year spirometric changes among Paris area workers. *British journal of industrial medicine*. 1982 Aug;39(3):221-32.
29. van Kampen V, Merget R, Baur X. Occupational airway sensitizers: an overview on the respective literature. *American journal of industrial medicine*. 2000 Aug;38(2):164-218.

30. Rushton L, Hutchings S, Brown T. The burden of cancer at work: estimation as the first step to prevention. *Occup Environ Med*. 2008 Dec;65(12):789-800.
31. Wild P, Moulin JJ, Ley FX, Schaffer P. Mortality from cardiovascular diseases among potash miners exposed to heat. *Epidemiology*. 1995 May;6(3):243-7.
32. Kristal-Boneh E, Melamed S, Harari G, Green MS. Acute and chronic effects of noise exposure on blood pressure and heart rate among industrial employees: the Cordis Study. *Archives of environmental health*. 1995 Jul-Aug;50(4):298-304.
33. Siegrist J, Starke D, Chandola T, Godin I, Marmot M, Niedhammer I, et al. The measurement of effort–reward imbalance at work: European comparisons. *Social science & medicine*. 2004;58(8):1483-99.
34. Kivimäki M, Nyberg ST, Batty GD, Fransson EI, Heikkilä K, Alfredsson L. Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data. *The Lancet*. 2012;380(9852):1491-7.
35. da Costa BR, Vieira ER. Risk factors for work-related musculoskeletal disorders: a systematic review of recent longitudinal studies. *American journal of industrial medicine*. 2010;53(3):285-323.
36. Virtanen P, Janlert U, Hammarström A. Exposure to temporary employment and job insecurity: a longitudinal study of the health effects. *Occupational and Environmental Medicine*. 2011;68(8):570-4.
37. Netterstrøm B, Conrad N, Bech P, Fink P, Olsen O, Rugulies R, et al. The Relation between Work-related Psychosocial Factors and the Development of Depression. *Epidemiologic Reviews*. 2008 November 1, 2008;30(1):118-32.
38. Nieuwenhuijsen K, Verbeek J, de Boer A, Blonk R, van Dijk F. Predicting the duration of sickness absence for patients with common mental disorders in occupational health care. *Scandinavian Journal of Public Health*. 2006;32(1):67-74.
39. Stansfeld S, Candy B. Psychosocial work environment and mental health - a meta-analytic review. *Scand J Work Environ Health*. 2006;32(6, special issue):443-62.
40. Theorell T, Hammarström A, Aronsson G, Bendz LT, Grape T, Hogstedt C, et al. A systematic review including meta-analysis of work environment and depressive symptoms. *BMC Public Health*. 2015;15(1):738.
41. Leach L, Butterworth P, Strazdins L, Rodgers B, Broom D, Olesen S. The limitations of employment as a tool for social inclusion. *BMC Public Health*. 2010;10(1):621.
42. Butterworth P, Leach LS, Strazdins L, Olesen SC, Rodgers B, Broom DH. The psychosocial quality of work determines whether employment has benefits for mental health: results from a longitudinal national household panel survey. *Occupational and Environmental Medicine*. 2011 March 14, 2011;68(11):806-12.
43. The Commonwealth. Commonwealth Heads of Government Meeting (CHOGM) -N, 2013, Colombo Declaration on Sustainable, Inclusive and Equitable Development, (2013), editors.

44. Frank J BC, Doi L, Estrade M, Jepson R, McAteer J, Treanor M, Robertson T, Williams AJ. Seven Key Investments for Health Equity across the Lifecourse: Scotland versus the rest of the UK. *Social Science & Medicine*. 2015;140(136-146).