Some reforms of occupational health and education in the era of the EU Construction Directive. Methods in comprehensive promoting of builders´ work ability.

T. LAUKKANEN

LAHTI HEALTH AND SOCIAL SERVICES

Kauppakatu 14, 15140 Lahti
Finland

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Introduction

The European Union Construction Directive 92/57/EEC emphasized planning in construction work and the meaning of training for occupational safety and skills, specifying the so called occupational safety and health plan for all projects. The same objective was indicated by the renewed International Labour Organisation regulations for construction work (convention 167 and recommendation 175, 1988). During the 1990s, national research and other programmes and education of the branch were thus developed.

The furthering of occupational health services of the EU and World Health Organisation in the 1990s was conceptualized as workplace health promotion, good occupational health practices and maintenance of work ability. The EU also has a frame directive for OH services, specified by national regulations (Walters 2002). Within it, new measures have been developed eg. in the United Kingdom, the Netherlands (prevention of work disability and furthering of work organization) and Finland (promotion of work conditions and ability).

The Finnish occupational health regulation has a distinctive base of furthering work ability comprehensively since 1992. This approach was developed on extensive follow up studies (Tuomi *et al.* 1997) and has resulted in many new measures (Huuskonen *et al.* 1998) . Work ability functions in the OHS have now been implemented in most work places (Peltomäki *et al.* 1999). They can be individually applied, such as promoting occupational skills and training and rehabilitation, ergonomics or work arrangements.

The legislation of occupational safety (2003) and occupational health services (2002) in Finland has recently been reformed. These services are among the most developed in the EU, but less frequent in the construction branch, because of increased temporary work and subcontracting. New individual follow up methods of occupational health services, especially of health surveillance of builders are now being developed, based on the proposals of the national OHS committee of the branch (STM 1999, Welch and Roto 1995).

Occupational health assessments have been proposed especially for construction workers in large studies (Matikainen *et al.* 1999, Gyi *et al.* 1998, Arndt *et al.* 1996). The present studies conclude that the OH services of temporary construction workers have been inadequate and regular health surveillance should be established for subcontracted builders (Juntunen *et al.* 1999, Gyi *et al.* 1998, Salminen and Saari 1997). The Finnish committee (STM 1999) also suggested construction occupational specific risk profiles, recently (2002) developed. Further, a special department of OH&S in the branch was founded.

The objective of the recent Finnish OHS legislation (2002) is to support staying in work life longer than earlier, this is to be be improved by promoting workplace health and intensifying the evaluation of work conditions. Multiskilled teams of OH professionals and collaboration with the employees as it regards OH development are emphasized. An OHS plan is stipulated for all employers. The prevalent good OH practice also presupposes continuing evaluation and development of the OHS. The early rehabilitation regulation in Finland recently (2002) will improve occupational health generally.

The reformed occupational safety legislation (2003) also presupposes a safety and health plan for all employers. It aims at improving work conditions also in temporary work and working alone. The regulations demand prevention of all kind of harassement and further collaboration of all workers in OH&S.

Studies on training and rehabilitation

The EU regulations now emphasise a health and safety plan in every construction project, as a base for safety, and information needs. Construction has long been one of the branches with least training at work (Matikainen *et al.* 1999, Juntunen *et al.* 1999, Gyi et al. 1998, Huuskonen *et al.*

1998, Paoli 1997). Construction foremen assessed further training necessary in planning and management, collaboration, IT, ergonomic working and problem solving (Lehto *et al.* 2002, Strobel and Krause 1997). Also work ability promotion was supporteded by them. The Finnish construction workers in general regard training and rehabilitation as the most important factor in sustaining their work ability (Huuskonen *et al.* 1998).

An extensive tripartite collaboration of education and local work life representatives is new in the recent Finnish educational reform, beneficing planning and employment, and multiple educational environments. The occupational training in the construction branch was evaluated nationally lately (Mäkelä *et al.* 2002), as it regards occupational safety and health. This should still be essentially furthered.

Furthering employment

The vocational training of the OECD (Organisation for Economic Co-operation and Development) and EU countries in the 1990s has developed towards work life oriented flexibility. Education is a main priority also in the EU, OECD and ILO employment promoting programs. Labour market training (LMT) has developed as the most important active labour market policy in many OECD-countries. It has been found to promote recruitment most strongly in the construction sector (Mikkonen 1995). The recession of the 1990s and unemployment concerned most the ageing and young builders.

Research points out that unemployment is often assessed to have some adverse effects on work ability (Piirainen *et al.* 1997). However, no difference between the assessments of the employed and those of less than six months unemployed workers were found generally. Positive effect of physiotherapeutical and councelling early rehabilitation was suggested (Rytkönen *et al.* 1997), both on employment and work ability of builders. Only a third of workers had a basic vocational education, but this did not predict employment. Best predictors of it were the short duration of unemployment and confidence about re-employment. Significant for well being was discovering other than work-related values. In the large study of Matikainen et al. (1999, Leino-Arjas *et al.*1999) unemployment of construction workers was mostly explained (22% of variability) by individual factors (age, previous employment and unemployment, mental resources, alcohol

consumption and smoking, values, professional skills). Health problems and perceived working conditions did not predict it.

Maintenance of work ability

A quarter of all European workers, and almost half of construction workers, find their health and safety at risk because of their work (Paoli and Merllié 2002). Chronic health problems and backache affect construction workers much more than in the average.

The physical stress in construction work seems to have increased during 1997-2000, as assessed by Finnish builders (55% of builders consider so in 1997, vs 65% of them in 2000, Kauppinen *et al.* 2000). This is analogous to EU construction workers generally (Paoli and Merllié 2002). The psychical stress decreased (29 % of the builders in 1997 vs 17%, Kauppinen *et al.* 2000, this is analogous to stress of EU builders, Houtman *et al.* 2002). The health behaviour of builders was found to be important, it is thus suggested to implement ergonomic consultation and guidance in in the OH services of the branch. (Kaukiainen 2000, see also Koningsveld and van der Molen 1997, Houtman *et al.* 2002).

Organisatory factors are proposed to be essential for work capacity in the FIOH study by Vahtera *et al.* (1999, see also Szücs *et al*. 2003). Earlier studies of builders and foremen have analogously indicated the meaning of collaboration, positive management, control and influence on one´s own work, and haste as detrimental.

Environmental development needs in building are especially great. Major risks of occupational and work-related diseases (see also Brenner *et al.* 2000) are asbestos (half of these diseases), noise and repetitive strain (a fifth). Technical modernisation does not seem to have decreased much physical load in construction work (Saloniemi 1997, Paoli and Merllié 2002). Workplace changes in construction seem to be quite slow, especially when work communities and work methods are concerned (Kaukiainen *et al.* 1998).

Builders´ occupational health

Matikainen *et al.* (1999) found a lot of potential and untreated disabilities of senior builders, affecting work capacity, during 1991-1995. Work ability (being in the work force/ on pension) could be predicted on demands of the job, the developed index, age and clinical findings and subjective assessments.

Leino *et al.* (1993) found further that a third of these builders had some disease they assessed as disadvantageous for their work ability. A fifth of all workers generally have some chronic disease they consider hinders their functional capacity (Piirainen *et al.* 1997, 176). Even two thirds of the temporary construction workers considered they have an illness disadvantageous for work (Juntunen *et al.* 1999, 20).

Arndt *et al.* (1996) emphasise, analogously to the Finnish studies (Matikainen *et al.* 1999; Kaukiainen *et al.* 1998), that workers with a high risk of disability should be identified in time, and specific rehabilitation programmes should be offered to prevent further deterioration. Further research should be conducted to identify more specific predictors of disability.

Conclusions

Most developed should be safety information and other occupational training, rehabilitation and occupational health services, assessed by construction workers. Research suggests early rehabilitation, OH&S aspects in occupational training and ergonomics in OH services. Also improvements in work environment are needed as much. The comprehensive programs of Workplace Health Promotion and Maintenance of Work Ability seem to be a good base for these. Recent studies indicate the meaning of organisatory and work arrangements generally.

The long term and young unemployed builders (training, maintenance of work ability) and those in subcontract or temporary construction work (health surveillance) should be considered specifically. It is indicated that individual factors are important both for re-employment and in explaining unemployment of builders. Neither health problems, perceived working conditions nor education predict it.

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