



Original Article

Knowledge and Experiences of Risks among Pupils in Vocational Education



Ing-Marie Andersson^{1,*}, Kristina Gunnarsson², Gunnar Rosèn¹, Marie Moström Åberg¹

¹ School of Technology and Business Studies, Dalarna University, Falun, Sweden

² Department of Occupational and Environmental Medicine, Uppsala University, Uppsala, Sweden

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ABSTRACT

Background: Young male and female workers are over-represented in statistics concerning negative outcomes of poor work environment and risky work. Young workers often have low awareness of risk, a lack of safety training, and inadequate introduction to the work. The aim of this study was to identify the knowledge and experiences of pupils of vocational schools concerning potential work environment risks in their future work.

Methods: The study design was a dual one, and included a questionnaire and focus group interviews. The study group consisted of 239 pupils from 10 upper secondary schools, who were graduating pupils in four vocational programs: the Industrial Technology Programme, the Restaurant Management and Food Programme, the Transport Programme, and the Handicraft Programme (in which students specialize in wood products). The upper secondary schools were located in the central region of Sweden.

Results: The pupils had limited knowledge that employers must, by law, conduct risk analyses and prevent risks. Many felt that they themselves are mainly responsible for performing their tasks safely. Pupils in all programs mentioned acute risk as the greatest risk at work. The theoretical education about safety at work was provided in the 1st year of the 3-year vocational programs.

Conclusion: A systematic approach to pupils' training in work environment, which is a basis for a safe and healthy workplace, is lacking. The study findings indicate that pupils are offered knowledge far from that intended by laws and by state-of-the-art occupational health risk research.

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1. Introduction

Young workers as a group are over-represented in the statistics concerning negative outcomes of poor work environment and risky work. In Sweden, 22 youths died because of accidents at work during the years 2009–2013. Every year, 3,500 young employees in Sweden are injured at work, and there has been a yearly increase in these figures post-2009. This fact was the background for the Swedish Work Environment Authority deciding to implement a special campaign to break this trend. Young men aged 16–24 years are especially over-represented compared to the rest of the workforce concerning accidents at work resulting in sick leave [1].

In Europe, young workers' risk of accidents at work is 25–40% higher than those of other age groups [2]. These findings are

supported by other studies examining occupational health and safety among youths [3–5].

In a global literature review, results from 63 nonfatal and 45 fatal studies were analyzed, and it was concluded that young men in particular had higher nonfatal injury rates than older men, but that the opposite was true for fatal accidents at work [6]. In addition, an extensive Canadian literature review based on 189 scientific articles showed similar results [7].

A study published by the Swedish Trade Union Confederation (2011) showed that the demands for professional competence have increased for persons entering the labor market [8]. This has resulted in late entrances into working life, often leading to temporary and precarious employments. Many employment opportunities are characterized by a low freedom of action, high psychosocial demands, low

* Corresponding author. School of Technology and Business Studies, Dalarna University, SE 79188 Falun, Sweden.
E-mail address: ima@du.se (I.-M. Andersson).

social support, and high work intensity. In the workplace, many young people come in contact with dangerous machines and chemical hazards, have strenuous physical workloads, and experience threats and violence, all of which make young workers more vulnerable.

Young people's view of occupational safety is of great importance for their behavior and perception of risk. A Canadian study found that many young workers considered accidents to be a part of their work, simply because work-related accidents are common and normally not very serious. These workers were not aware that they could take certain measures to avoid such accidents to a great extent. Young female workers felt that their complaints concerning the work environment were not taken seriously; by contrast, young men did not complain because they thought that complaining might affect others' view of them as mature workers [9]. Tucker and Turner [10] highlighted that when teenage workers faced potentially harmful work-related hazards and had safety concerns, they were reluctant to call attention to the risks because they felt inexperienced and were new hires. Youngsters are eager to please their superiors and fear to lose the job because of complaints or demands directed to supervisors or more experienced coworkers [8,10,11].

The literature also shows that training in occupational safety and health is crucial and must be included in apprenticeship programs to improve the situation. This applies to the form of teaching as well as the content being taught [3,12–14].

The literature clearly shows that young people entering working life often have a higher incidence of accidents and other negative work effects, compared to the workforce in general. Questions of interest are, therefore, how pupils in vocational schools are prepared to minimize the risks involved in their future work, and what their thoughts about and attitudes to risks are. The aim of this study was therefore to identify the knowledge and experiences that pupils in vocational school gather concerning potential work environment risks in their future work.

2. Materials and methods

2.1. Study group

The Swedish education system is based on 9 years of compulsory schooling. Most children start school when they reach the age of 7 years. After completing the compulsory school, at the age of about 16 years, all youths are entitled to continue with a 3-year voluntary upper secondary school education. The upper secondary school consists of 18 different national programs. Some of the programs focus on the study of science, and others are vocational programs. The vocational programs include workplace-based learning [15].

2.2. Study design

The study design was dual, combining quantitative and qualitative methods. A questionnaire was administered to all participants in the study group. Focus group interviews were also undertaken to gain a deeper understanding of the pupils' perceptions of health and safety issues at work as well as of the training received in these matters.

2.3. Questionnaire study

2.3.1. Participants

The study group consisted of 239 pupils from 10 upper secondary schools who were graduating in the following vocational programs: the Industrial Technology Programme, the Restaurant Management and Food Programme, the Transport Programme, and the Handicraft Programme (in which students specialized in wood products). The upper secondary schools were located in the central region of Sweden.

The schools, which were both private and community schools, were selected from a register of the Swedish National Agency for Education. Of 273 possible pupils, 239 completed the questionnaire. If necessary, the distribution of questionnaire was followed by one reminder. The response rate was 88%. Of the responders, 166 were men and 73 women (Table 1).

2.3.2. Recruitment

The participating classes of each upper secondary school were visited from December 2012 until March 2013. The researchers informed the pupils about the study and asked them to fill in a questionnaire containing questions on risks in work environment. Pupils who were absent received a letter containing information about the study; in these cases, the teacher administered the questionnaire to the students and sent the finished questionnaire back to the researchers.

2.3.3. Questionnaire

The questionnaire contained nine questions covering a few topics that are considered essential by the research group and form the core of the Swedish work environment legislation [16]. One question was about employees' knowledge about risks in work environment, three questions were about employees' responsibility at work and types of actions required to improve the work environment, one question was about laws and provisions steering work environment, two questions were about what kind of actions pupils would take if they encountered problems in the work environment, one question was about the types of introductions pupils had received about risks and safety during their workplace-based learning course, and one was question about pupils' own opinions about risks in work environment in their future professions. The questions correspond partly to a questionnaire used by Tucker and Turner [17].

Each question together with the response alternatives is presented in the Results section.

2.4. Interview study

2.4.1. Participants

Focus group interviews were undertaken with one group at each of the six upper secondary schools. The focus groups consisted of four to seven pupils, with about two pupils from each program in cases where more than one program was offered at the school. At upper secondary schools with only one program, all pupils belonged to that program.

2.4.2. Recruitment

Of all the participating schools, these six upper secondary schools were chosen based on their size, number of programs, and geographical localization. The headmasters at these schools were requested to inform the pupils and ask them to participate in the focus group interviews.

Table 1
Study population number of pupils participating in each program

Vocational program	Distributed questionnaires <i>n</i>	Answered questionnaires <i>n</i> (%)
Industrial technology	67	58 (87)
Restaurant management and food	85	76 (89)
Transport	92	76 (83)
Handicraft, specializing in wood products	29	29 (100)
Total	273	239 (88)

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