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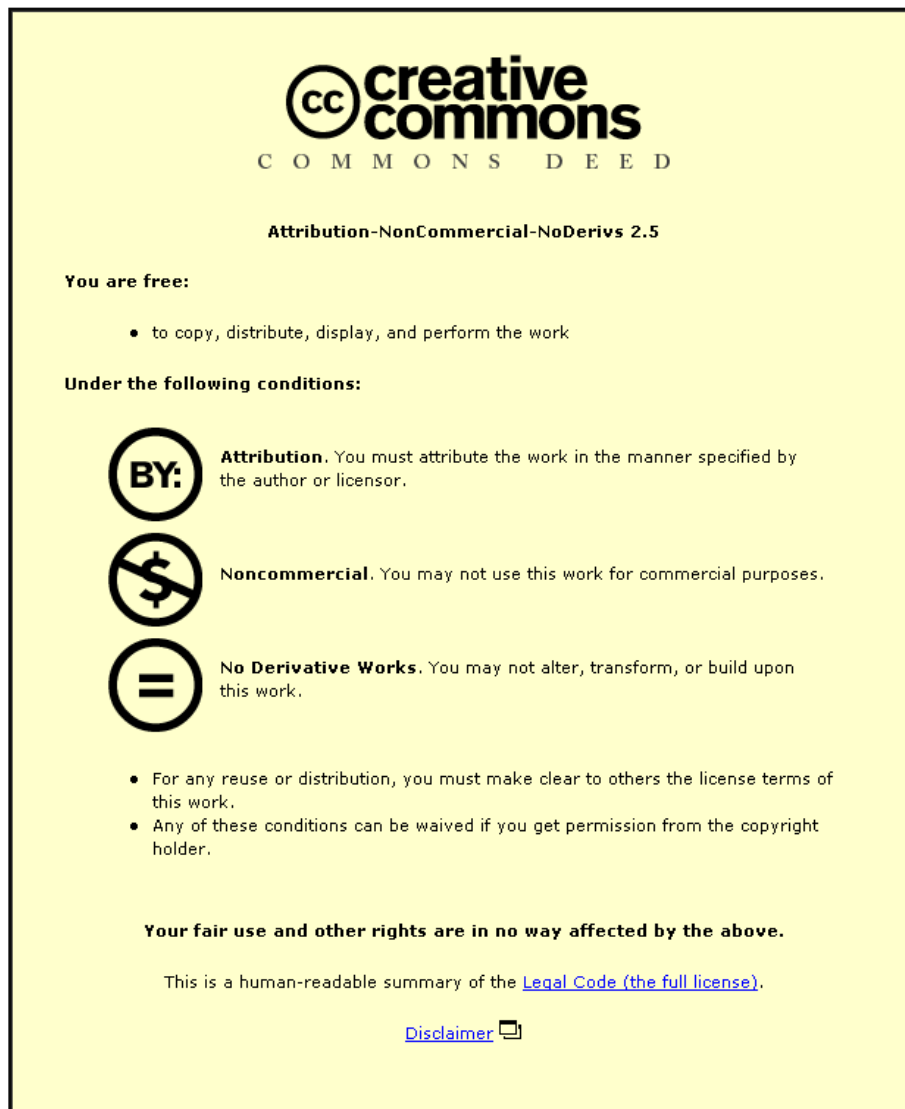
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Manual Handling Training: An Investigation of Current Practice

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Musculoskeletal disorders (MSDs) are the most common cause of severe long-term pain and physical disability affecting hundreds of millions of people worldwide. In industrialised countries, about one third of all health-related absences from work are due to MSDs. In the UK, the 1992 Manual Handling Operations Regulations (UK) set out a hierarchy of measures aimed at reducing the risks presented by manual handling; nevertheless concerns have been raised regarding the suitability of manual handling training and its effectiveness in reducing MSDs among employees. The study outlined here investigated current practice in relation to manual handling training within the UK and aimed to establish whether such training was considered by organisations to be effective. One hundred and fifty telephone interviews were conducted in total comprising 120 interviews with representatives from UK organisations and 30 interviews with representatives from UK training consultancies. The findings suggest that manual handling training is considered to be more effective if it is tailored to meet specific task and industry needs. The results from this study have informed new guidelines for effective manual handling training. It is hoped that these guidelines will be useful for other nations.

INTRODUCTION

Musculoskeletal disorders (MSDs) are the most common cause of severe long-term pain and disability, affecting hundreds of millions of people around the world (Woolf & Pfleger, 2008). Within Great Britain, MSDs have consistently been the most commonly reported type of work-related ill-health for over a decade (Health & Safety Commission [HSC], 2000, 2001, 2004, 2005, 2006, 2007). Within Europe approximately 25% of workers complain of backache and around 23% report muscular pain (European Agency for Safety and Health at Work, 2008).

Within Great Britain, 43% of individuals suffering from a work-related MSD suffer from a disorder mainly affecting their back (HSC, 2006). Back pain can arise in many work situations, but it is more common in tasks that involve: heavy manual labour, handling tasks in heavy industry, manual handling in awkward places and repetitive tasks.

Manual handling has been defined as any activity requiring the use of force exerted by a person to lift, lower, push, pull, carry, move, hold or restrain a person, animal or object (Carrivick et al., 2001). If such tasks are not carried out safely there is a risk of personal injury and research shows a significant linkage between musculoskeletal injuries and manual handling (Hoozemans et al., 1998; Edlich et al., 2005). Over one third of reported injuries resulting in 3 days or more absence in the UK are due to manual handling incidents at work (Health & Safety Executive [HSE], 2004). The associated economic cost of such injuries is £5.7 billion annually (HSE, 2008).

The 1992 (UK) Manual Handling Regulations (HSE, 1992) and their accompanying guidance set out a hierarchy of measures to reduce the risk of injury from manual handling. These measures include training for those at risk. Manual handling training programmes are designed to make workers aware of the risks associated with manual handling and to develop new skills in workers to modify behaviour and increase competence in performing manual handling tasks. The nature of the training offered and its effectiveness often

depends on a multitude of factors such as method of teaching, organisation setting and the type of training technique that is utilised (van der Molen et al., 2005).

Compliance with manual handling legislation within the UK can vary across organisations (Addison & Burgess, 2002) and non-compliance can result in adverse acute and chronic health outcomes (Knibbe & Friele, 1996; Dempsey & Mathiassen, 2006). Although some limited guidance is available on the principles that should be adhered to with manual handling training (Graveling et al., 2003), the efficacy of manual handling training methods have been questioned by a number of authors (Snook et al., 1978; Stubbs et al., 1983; Straker, 1989; Hignett, 1996, 2003; Hollingdale & Warin, 1997; Edlich et al., 2005; Dawson et al., 2007). A recent review examining the effectiveness of manual handling training concluded that there is no evidence for its effectiveness in reducing back pain (Martimo et al., 2008).

It has been suggested that manual handling training should be specific to the workers and the tasks carried out and that there is a need for further research into the effectiveness of current measures (Gagon, 2003; Hignett, 2005). This study therefore sought to investigate current practice in relation to manual handling training within the UK. Of particular interest was what aspects of this training were considered to be effective and how organisations and manual handling training providers judge the effectiveness of manual handling training programmes.

METHOD

Research design

Semi-structured telephone interviews were conducted with representatives from organisations and training consultancies within the UK to collect detailed information about the scope of manual handling training undertaken within organisations. In total, 150 interviews were completed, of which, 120 were conducted with organisations and 30 with training

consultancies responsible for delivering manual handling training to various industrial sectors. The interviews were conducted during working hours and were arranged at a time that was convenient for the participant. Participants were fully informed regarding the aims of the study and were assured that any information provided would be presented in an anonymised form. Each telephone interview lasted between 20 and 30 minutes and was recorded on tape with the knowledge and permission of the interviewee. All of the interviews were subsequently transcribed.

Research instruments

Two semi-structured interview schedules were developed, one for the interviews with organisations and the other for the interviews with trainers. The former determined the level of training offered by organisations, the components of this training and the extent to which the training was tailored to meet particular industry or task needs. The latter explored the specific components of manual handling training offered by external training consultancies. Using semi-structured interviews allowed flexibility to follow up interesting responses and the investigation of underlying motives. Broad, open-ended questions were used with additional questions to clarify or probe particular issues. The interview schedules were piloted and refined in light of those pilot studies.

Sample

The Thomson Business Search Pro Directory, a UK database which allows the user to search for organisations according to criteria such as number of employees, Standard Industrial Classification (SIC) codes and type of business, was used to recruit organisations for this study. The selection procedure involved quota sampling to ensure that the final sample comprised organisations from a broad range of industrial sectors.

Data analysis

Each interview schedule was coded and analysed using the statistical package SPSS (Statistical Package for the Social Sciences, Version 14.). Frequency calculations were then obtained for all of the structured variables on the interview schedule. The qualitative interview transcriptions were imported into the qualitative software tool, NVivo (Version 2.0) and analysed by sorting the material into emergent themes as described by Braun and Clarke (2006).

RESULTS

Participant details.

The interviewees comprised 92 health & safety personnel, 21 managing directors, 7 supervisors and 30 trainers. The sample comprised 23 small (<50 employees), 38 medium (50 – 250 employees) and 59 large organisations (>250 employees). The sample was drawn from a range of industries including agriculture; manufacturing; utilities; construction; wholesale, retail and trade; hotels and

restaurants; transport, storage and communication; public administration and defence and health and social work.

Organisations

The majority of interviewees reported that their organisation had undertaken some form of manual handling training within the previous 12 months (86.7%, $n = 104$). However, this training was not always for all employees, but was sometimes directed primarily at new recruits and was offered as part of their induction process. Interviewees from 59 organisations (49%) felt that manual handling training should be offered to all employees on an annual basis. A number also considered that training should be given whenever there are changes in work practices or reported health problems. For example, a manager from a large manufacturing organisation stated:

“This should be offered once at least every year but it should actually be offered as a result of changes in work activity or as a result of a musculoskeletal disorder”

Other interviewees reported that the frequency of training should be dependent on the level of risk to which employees are exposed. A health and safety manager from a large local government organisation explained that manual workers received more frequent training than some other employees:

“It depends on risk. Generally every two years for admin [administration] staff, but every year for manual workers”

Most organisations offered manual handling training to new recruits shortly after the commencement of employment. A total of 76 organisations (63%) offered such training within one week of starting employment. Although manual handling training was incorporated into induction programmes within the organisations surveyed, the level of instruction was described as covering the basic elements only. A health and safety officer from a large hotel explained:

“We have an induction that will include an element of very basic manual handling instruction”

A health and safety manager from a medium sized organisation within the construction industry stated that in his organisation there was no formal policy regarding how soon new employees were required to attend a manual handling training course. On site ‘tool box talks’ were used as an initial training measure before employees were able to attend a full manual handling training course:

“Our tool box talk basically covers the basic principles of safe handling [...] It’s very much covering the basic principles”

The majority of interviewees reported that within their organisations manual handling was mandatory for all employees with only 5% ($n = 6$) of those interviewed reporting that attendance on a manual handling training course was an elective process. In the cases where it was an elective process, interviewees reported that line managers select employees for training rather than employees themselves being able to present themselves for a training course.

Of the 120 organisations surveyed, 93 reported conducting ‘in house’ manual handling training (using their own staff to deliver training packages for employees), whilst the remaining 27 used an external training consultancy to deliver the training on their behalf.

‘In house’ manual handling training

Of the 120 participating organisations, 93 reported using ‘in house’ methods for the delivery of manual handling training. The most common reported driver for undertaking manual handling training among these organisations was the recruitment of new employees requiring induction training. Organisations often reported more than one driver for manual handling training. A full breakdown of the drivers is shown in Table 1.

Table 1. Drivers for manual handling training (‘In house’ training)

Driver	Percentage of organisations (%)
Sickness / injury reports	84.9
Induction of new employees	97.8
New working practices	89.2
Regulatory requirements	95.7

In addition to the drivers identified in Table 1, some interviewees described other influences which directed the training of their employees. A health and safety manager from a large utility organisation described how training needs were identified through the process of risk assessment:

“Obviously manual handling is one of the biggest causes of accidents. Slips, trips and falls is another so those are two of the ones that we are looking at as a company. It goes through risk assessment and the biggest risks are the manual handling and slips and trips”

Another health and safety manager from a large transport organisation emphasised that his organisation felt that training was important because employees were exposed to a high level of risk:

“So the reason we are so, you know, hot on basically doing manual handling training is because it’s a great risk area”.

Of the 93 organisations offering ‘in house’ training for employees, 81.7% (n = 76) reported that the training given to employees was industry specific, i.e. tailored to cover specific manual handling risks common within any one industry. A slightly larger proportion (82.8%, n = 77) offered task specific training for employees whereby workers were given training in particular manual handling tasks relevant to their job role. The remaining organisations reported training which was generic in nature, whereby employees were trained in general principles which could be applied to any task. The generic nature of this training was criticised by a few interviewees. One health and safety manager responsible for the ‘in house’ training of employees within a large hotel explained how some of the available training material was not relevant to his employees:

“This is one of the problems to be honest with you with using generic, off the shelf training videos for example, the feedback we get from staff is that it is not specific to our industry. It’s more office based or industrial based and our industry is quite unique in that regard so we have tried to be careful to use material that is as relevant to us as possible”

All but one of the organisations offering ‘in house’ training to employees reported incorporating a practical element into

their training programmes. The generic nature of some current manual handling training courses was also reflected in the type of practical element implemented during the training. There was considerable diversity in the type of practical training offered during manual handling training of employees. Such activities varied from the showing of a video of people lifting, practical tasks undertaken within the classroom only using non-specific items, practical tasks undertaken within the classroom only using task specific equipment and a mock-up situation using non-specific equipment and a mock-up situation using task specific equipment. Despite this diversity, most interviewees reported that they felt that having a practical element to the training was important. A health and safety manager from a small manufacturing organisation stated that employees preferred the practical element of the training:

“Because they are practical people they tend to prefer the practical things”

One health and safety manager from a medium sized hotel reported conducting ‘in house’ training sessions for employees and explained that his training covered theoretical aspects within the classroom environment and then incorporated task specific practical training within the workplace itself:

“We discuss it in the classroom but then we go through each of their tasks in their own department”

A variety of methods of delivering the ‘in house’ manual handling training were reported by interviewees; 10.9% of organisations, (n = 10) stated that all their manual handling training was delivered by a trainer in person, 1.1% (n = 1) used computer based methods only and 88% (n = 81) stated that their training was delivered in a variety of ways for example, by a combination of in person, via a video or by computer based learning.

The effectiveness of ‘in house’ manual handling training was measured by organisations in a number of different ways including the following measures; productivity, sickness absence, cost-benefit analysis and staff morale. The most common method of evaluating the effectiveness of manual handling training was to monitor sickness absence (n = 85). A variety of additional measures were also described including the use of on-line suggestion boxes, spot checks on employees techniques and monthly reports from occupational health officers. One line manager with responsibility for health and safety within a small manufacturing organisation stated:

“Every six months we review all data and see accident reports, internal comments from staff and any problems would be highlighted within the review which is a six-monthly process”

‘Out sourced’ manual handling training

Of the 120 organisations participating in this study, 27 reported using an external consultancy practice for the development and delivery of their manual handling training. The most common reported driver for undertaking manual handling training among these organisations was the recruitment of new employees requiring induction training.

Organisations reported that external training consultancies did not always visit the organisations prior to the

commencement of any training. A site visit was reported by approximately half (48.1%) of the organisations (n = 13). Where a site visit was undertaken by the trainers, all organisations reported that the information gained during the visit was integrated into the subsequent manual handling training programme.

During the telephone survey, organisations outsourcing their manual handling training were asked if the training provided was industry specific. Training tailored to their industry needs was reported by 74.1% of the organisations (n = 20) with slightly more (81.5%, n = 22) being offered task specific training by external consultancies. An evaluation of the effectiveness of the manual handling training was undertaken by only 44.4% of the organisations (n = 12) seeking an external provider to deliver the training. As with those organisations offering 'in house' training, for those using external consultancies, the most common method of evaluating the effectiveness of manual handling training was to monitor sickness absence.

Training consultancies

Thirty training consultancies responsible for the development and delivery of manual handling training were interviewed. In all cases, the training provided to organisations was delivered solely by trainers employed by the training consultancies. A variety of qualifications were reported as held by such trainers.

The training consultancies were asked to describe what they thought were the drivers that prompted organisations to use their services. The majority (n = 28) reported that regulatory requirements were the main driver behind any training. However, over half of the trainers interviewed also mentioned other drivers that prompted organisations to request manual handling training. These included insurance company requirements, the identification of risk through the process of risk assessment, employee absenteeism and a need to act on direct advice from a Health and Safety Executive (HSE) inspector. One trainer from a training company explained:

"Predominantly we find the reasons that companies will look for manual handling training is awareness of manual handling operations regulations – made aware by either HSE intervention or quite often through insurance. And then the other main thing will be through risk assessment from their health and safety advisor or manager"

Of the 30 training consultancies interviewed, two thirds (63.3%, n = 19) reported that they conducted a site visit before the commencement of a manual handling training course. In each case, the information obtained during the course of this visit was incorporated in the subsequent training programme.

A variety of topics were covered during the manual handling training offered by training consultancies. Of those interviewed, all reported covering aspects of the law when delivering training. In addition to this, all reported covering some aspects of anatomy and physiology.

All the training consultancies interviewed reported incorporating a practical element into their training (n = 30). One trainer from a small training organisation explained that

a practical element was used during the training to maintain the interest of the trainees:

"They start the day with the theory of anatomy and then the regulations. But before lunch we try and throw in a couple of exercises there as well, keep people awake"

Another training manager from a small training organisation emphasised that during their training the theoretical aspects were applied to the work environment within the work environment itself:

"We generally try to do lifting of a small square box, the principles behind that and then we go into the work environment and try and incorporate it within their work place"

Two of the trainers interviewed felt that insufficient practical work was undertaken generally. One trainer from a private training company stated:

"I am aware that some organisations where we go, they do it 'in house'; via a video or something like that but it's not practical enough, people don't concentrate much really"

Nearly two thirds (n = 19) of the training consultancies reported conducting some form of follow-up with organisations to evaluate the effectiveness of manual handling training offered by their consultancies. One training manager from a small training consultancy stated that they gave out specific audit materials to assist organisations in evaluating the effectiveness of their training. Cost was identified as a barrier for some organisations in evaluating out-sourced training. A trainer from a small independent training company described how organisations cannot afford to implement such a process:

"I mean in an ideal world, you know, we would be able to go back 3 months later and observe people who we had done the training with but businesses just can't afford to do it"

Effective manual handling training

The following effective components of manual handling training were identified as a results of this study.

Tailoring the training

Manual handling training is considered more effective if it is tailored to specific industry and task demands. In addition, the training should meet the needs of the individual and this is best achieved by using familiar terms that the trainees can relate to and by embracing recipients' learning styles.

A practical element

A practical element to the training can reinforce learning. A practical element is more effective if it is tailored to individual job demands i.e. trainees undertake manual handling tasks during training using familiar equipment relevant to their work.

Reinforce the training

Manual handling training is thought to be effective if it is adequately reinforced with suitable materials and through ongoing support within the organisation itself. Examples which have proved to be effective include the use of simple summaries of the course content, interactive workbooks and the provision of ongoing support for employees from manual handling specialists.

Trainers

Trainers with experience and knowledge of a particular industry have a greater understanding of specific risks within an organisation and this may lead to more effective training. A number of benefits of using experienced and suitably qualified trainers have been identified including the delivery of relevant information, securing the engagement of trainees and the identification of specific risks within manual handling.

Refresher courses

Manual handling training may be more effective if refresher courses are offered to employees on a regular basis to update and refresh their learning. These should be offered on a yearly basis, or as a result of changes in equipment or working practices.

External consultancies

Manual handling training offered by external consultants is likely to be more effective if consultants develop an understanding of organisational needs. This is best achieved through a site visit undertaken before training commences.

DISCUSSION

The findings from this study offer an understanding of existing practice in relation to manual handling training in the UK. The results have identified the current level of training offered across a broad sample of organisations and industries. The results have also identified some existing components of manual handling training programmes and the extent to which such training is tailored towards recipients' specific industry or job tasks.

The majority of organisations surveyed during the course of this research were compliant with manual handling legislation. This is an encouraging finding which demonstrates significant progress since 2002 when Addison and Burgess identified varying levels of compliances within an area of the UK. Although high levels of compliance were identified in this study, the levels of active engagement varied across organisations. For example, some organisations demonstrated a high level of awareness and response to the legislation whilst others complied with only the basic minimum requirements.

Addison and Burgess (2002) suggested that pressures on small businesses to survive within a competitive market may explain the lack of compliance with manual handling legislation identified during their study. Since 2002 however, there has been an increasing focus on the organisational benefits of proactive health and safety management. This may help explain the increasing levels of compliance identified during this study.

Whilst the majority of the organisations surveyed reported tailoring their manual handling training to particular industry or task needs, this was not always the case. For example, of those reporting a practical element to the training, the majority reported using some form of classroom-based activity incorporating non-specific tasks. Much of the manual handling training currently undertaken therefore appears to be generic in nature. This may be due to a lack of guiding principles (Graveling et al., 2003) or a lack of

suitable training areas in which job-specific tasks can be undertaken. Time may also be a constraint on the number of tasks covered during training.

The effectiveness of manual handling training was generally measured by organisations through the monitoring of sickness absence amongst staff. However, a single measure such as this cannot accurately reflect the overall effectiveness of any individual training component. It is also surprising that a third of the training consultancies surveyed reported that no follow-up was conducted with organisations to evaluate the effectiveness of training provided. The efficacy of manual handling training in preventing MSDs has previously been questioned (Snook et al., 1978; Stubbs et al., 1983; Straker, 1989; Hignett, 1996; 2003; Hollingdale & Warin, 1997; Dean, 2001; Edlich et al., 2005; Dawson et al., 2007) and current methods of evaluation used by organisations provide little evidence on what particular aspects of the training are successful. The effectiveness of any manual handling training is dependent on a number of factors including the method of teaching, organisation setting and type of training technique that is used (van der Molen et al, 2005). A recent systematic review of the literature (Haslam et al., 2007) identified both training in lifting techniques and educational-based training to be ineffective in reducing injuries from manual handling tasks. The review also suggests that principles learnt during training are not transferred into the working environment. This has clear implications for current practice, as identified by our results. This, and the lack of suitable guidance on manual handling training suggests that there is a need to develop robust evidence-based training principles which are suitable for UK industry.

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